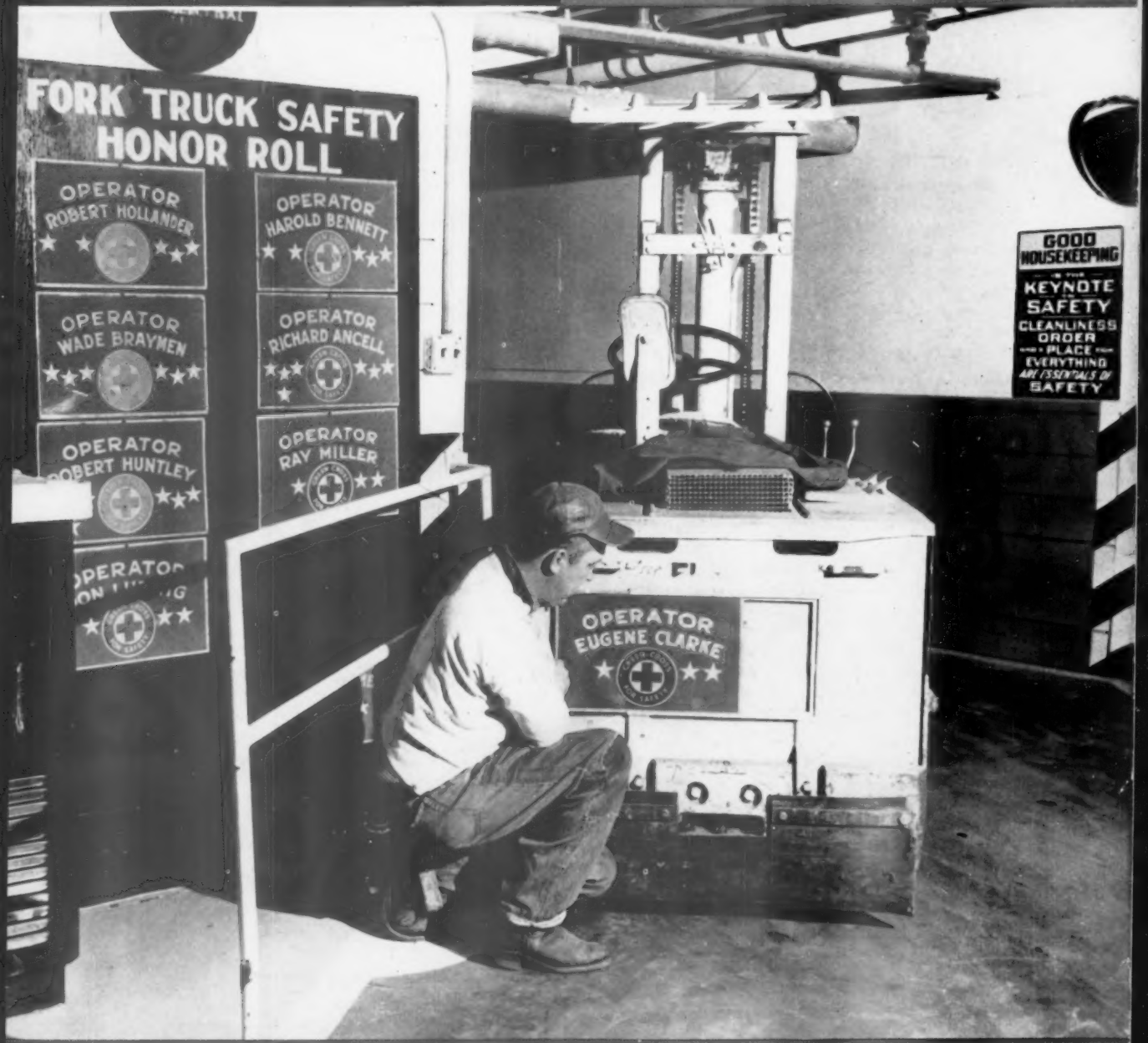
National SAFETY NEWS

TWO SECTIONS: SECTION 1

NOVEMBER 1956

This issue contains a special Technical Feature Section

The Journal of the AMERICAN SOCIETY OF SAFETY ENGINEERS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GOOD HOUSEKEEPING
IS YOUR KEYNOTE IN SAFETY
CLEANLINESS ORDER AND PLACE FOR EVERYTHING ARE ESSENTIALS OF SAFETY

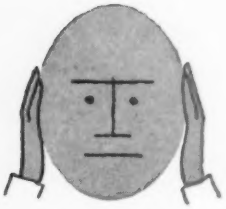
GOLD STAR DRIVER

IN THIS ISSUE

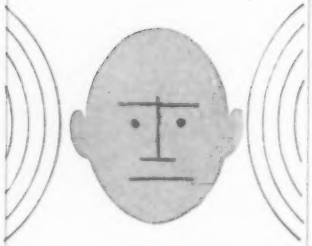
Let's Back the Attack!
Medical Service for Small Plants
Planning for Safer Materials Handling

What you must know

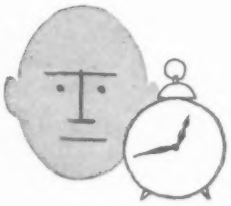
to identify *harmful* NOISE



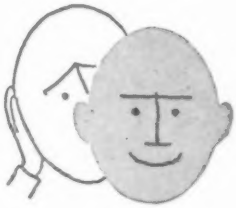
HOW INTENSE IS IT?
(*sound pressure level*)



WHAT IS THE FREQUENCY?
(*cycles-per-second*)



HOW LONG IS THE WORKER EXPOSED?
(*duration*)



WHO IS THE PERSON INVOLVED?
(*susceptibility*)

If you are concerned with noise, here's a four-point question outline that will help you find the answer to the big question—Do you have a noise problem?

HOW INTENSE IS IT? This information, which is a measure of the sound pressure level, is read from a sound level meter in decibels. Such a measurement is simply the relationship between a reference value, equivalent to approximately the least sound that can be heard, and the noise measured. Unfortunately, no accepted standards have been set on maximum safe levels. Some references state the maximum at 85 decibels; other sources claim 90 decibels, but such limits must be qualified by the other dimensions of exposure. However, sound level meter readings quickly point to danger areas that require more complete investigation.

WHAT IS THE FREQUENCY? The answer to this one is important because certain frequencies cause more damage than others. For instance, investigations show that the ear is most sensitive in the 2000 to 4000 cycle-per-second region—a fact partly due to the particularly high transmission efficiency of the ear in this region. Instrument readings give you a complete frequency pattern analysis of your operation.

HOW LONG IS THE WORKER EXPOSED? This consideration is all-important. An area where the noise level is not a hazard for a short period of time, can be harmful if the worker is exposed for long periods. It is essential to know the noise levels, frequencies and exposure time to fully appraise the environment. Furthermore, it is important to know if the exposure is continuous or intermittent. From this you see that formulating any noise damage risk criteria must involve careful determination of exposure time.

WHO IS THE PERSON INVOLVED? There are, of course, wide variations in individual susceptibility to noise damage. At present, the most successful way to record this information seems to be complete and frequent audiometric examinations. Case histories spell out the importance of this type of check-up. It has been found, for example, that while one worker's hearing was completely normal after an exposure, the man beside him, equally exposed, required transfer to a less noisy location to avoid damage to hearing.

This outline of questions on noise underscores only the most basic aspects. If you would like answers to your specific noise problems, there's an MSA representative ready and waiting to serve you.

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Vol. 74, No. 5 NOVEMBER 1956

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In This Issue

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* * *

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DIMINISHING RETURNS

EVERY student of freshman economics is familiar with the law of diminishing returns. It has a disturbing influence in every field of human activity, including accident prevention.

You can find plenty of examples of it in plant safety programs. A shop that has been a horrible example decides that accidents must be prevented. The kick in the pants may be high accident costs, public opinion, or perhaps a guilty conscience.

The company is really in earnest and spares no expense. The safety program gets off to a good start and makes a creditable showing just by cleaning up the more glaring hazards. Then the accident reduction curve flattens out, even though everybody is still working hard at prevention.

This has been the experience of many a plant and, to some extent, of industry as a whole. From time to time it has made many safety men stop and think; have present methods outlived their usefulness?

This does not mean that no progress has been made in accident reduction. In many industries new low accident rates are being established. Yet many small and medium sized plants are lagging behind the parade, keeping the average rates for the country discouragingly high.

Some of the weaknesses of safety programs may be those of industry itself. One of the criticisms directed against our present set-up is that the individual knows little of the processes beyond his own job. The man who made ox yokes a century ago got the complete picture; the man who feeds parts to a press or tightens nuts doesn't. So he gets bored and discontented, even when he has no specific grievances.

This specialization, it is claimed, makes the individual less self-reliant and therefore less able to protect himself in a hazardous environment. That, however, is a far from satisfactory explanation. The farmer is one of our more self-reliant citizens, yet farming accident rates are distressingly high.

One might also ask whether modern safety organization methods have weakened the self-reliance of management and supervision. Is industry too inclined to hire a safety director and consider the problem solved?

What does a safety director do? In a whole lifetime he could not acquire all the skills and knowledge needed to keep a plant safe. He is essentially a coordinator. He gets those who work with him to take over certain responsibilities and specific jobs, all leading toward the goal of a safe plant.

The way to improved safety experience, many feel, is through the development of the individual. He needs the self-sufficiency of the pioneer, also the cooperative spirit of earlier days as displayed in such community enterprises as threshing and barn raising.

That cannot be done through mass training methods alone. In that field we are also reaching the point of diminishing returns. More individualized instruction is needed but not every plant can give it. It will be a huge task but the potential results are also great.

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WIRE FROM WASHINGTON

By Harry N. Rosenfield
Washington Counsel, National Safety Council

SAFETY, in one form or another, is a year-'round preoccupation of a wide variety of Federal agencies.

Aviation. The existing airways traffic control system is "a good and safe system" but "not adequate to meet all the demands placed upon it without imposing extensive delays on the users," was the testimony of the Acting Civil Aeronautics Administrator before a Congressional Committee. Plans for extension of traffic capacity cover radar, communications and navigation aids. He also predicted a total of 118 million domestic airline passengers by 1970, as compared with 38 million in 1955. The Undersecretary of Commerce for Transportation said that there was "an urgent need for stepped up efficiency" in the planning for aviation supporting facilities, "along with safety."

Controversy between Federal aviation agencies developed over a proposal by the Civil Aeronautics Board to require airlines to operate 75 per cent of their schedules on time. The Director of the CAA Office of Aviation Safety opposed the CAB plan, observing that the proposal "could have adverse effects on safety by exerting undue pressure on the operation and maintenance personnel." The Director of the CAB Bureau of Safety Investigation defended the proposal on the ground that the 25 per cent allowance for late arrivals would be adequate for unforeseeable delays.

The CAA reissued its minimum performance standards for safety belts to be used in civil aviation in the United States, and issued notice of proposed amendment of the Technical Standard Orders covering minimum standards for aircraft seats and berths.

The CAA announced that there is a "high" possibility that the sonic boom of planes flying very low, but faster than the speed of sound, will cause "widespread public disturbance and damage." According to the CAA report, airplane passes near the ground at several times the speed of sound "are potential hazards."

The CAA announced that the number of small-plane accidents declined in 1955 from the preceding year. The report shows what the CAA calls a "spectacular improvement" in instructional flying.

A conference of experts from 20 nations was convened by the International Civil Aviation Organization, to study the problems of aviation safety. Among the items on the agenda were: mid-air collisions, international traffic problems, international standards for anti-collision lights, rear-facing seats, and the teamwork required between land and air personnel in aviation.

Industrial Safety. The Bureau of Mines issued final regulations prescribing requirements for tests and investigations leading to approval of self-contained breathing apparatus.

The United States Public Health Service made grants for 12 research projects into air pollution.

The Federal Communications Commission announced that it intended to amend its rules and regulations to provide new frequencies for the use of the logging industry for a radio signaling device to replace other signals in the phase of log-hauling known as "yarding," or the pulling of cut logs to a road where they can be loaded on trucks for further transportation. The FCC invited comments from interested parties.

The Administrator of the Wage and Hour and Public Contracts Division, within the Department of Labor, ruled that there could be serious violations of the safety and health provisions of the Walsh-Healey Public Contracts Act even where there is no showing of a casual connection between the unsanitary and hazardous conditions and the injuries which occurred. He ruled that the existence of such conditions, rather than their casual relationship to the injury, was what the law sought to prevent. The final decision in this matter is up to the Secretary of Labor. In another case under the same law, an examiner ruled that the fact that neither an insurance company nor a union complained of unsafe and hazardous conditions is no defense where such conditions were actually found to exist.

Marine Safety. The Merchant Marine Council held a hearing to receive comments, views and data on proposals to amend the vessel inspection regulations of the Coast Guard as to biennial inspection of cargo and tank vessels, lifesaving equipment for vessels engaged in offshore drilling operations, and dangerous cargo.

Highways. Motor vehicle registrations continue to rise in the United States, and are expected, in an estimate by the Bureau of Public Roads, to reach 62,275,000 for 1956. This estimate predicates 54,300,000 passenger cars, a 4.1 per cent increase over 1955; trucks will increase 3.7 per cent, to 10,975,000. Estimates for 1965 total 81 million motor vehicles.

The Interstate Commerce Commission reports that for the first 6 months of 1956 there was an increase of 6 per cent, as compared with 1955, in the number of over-

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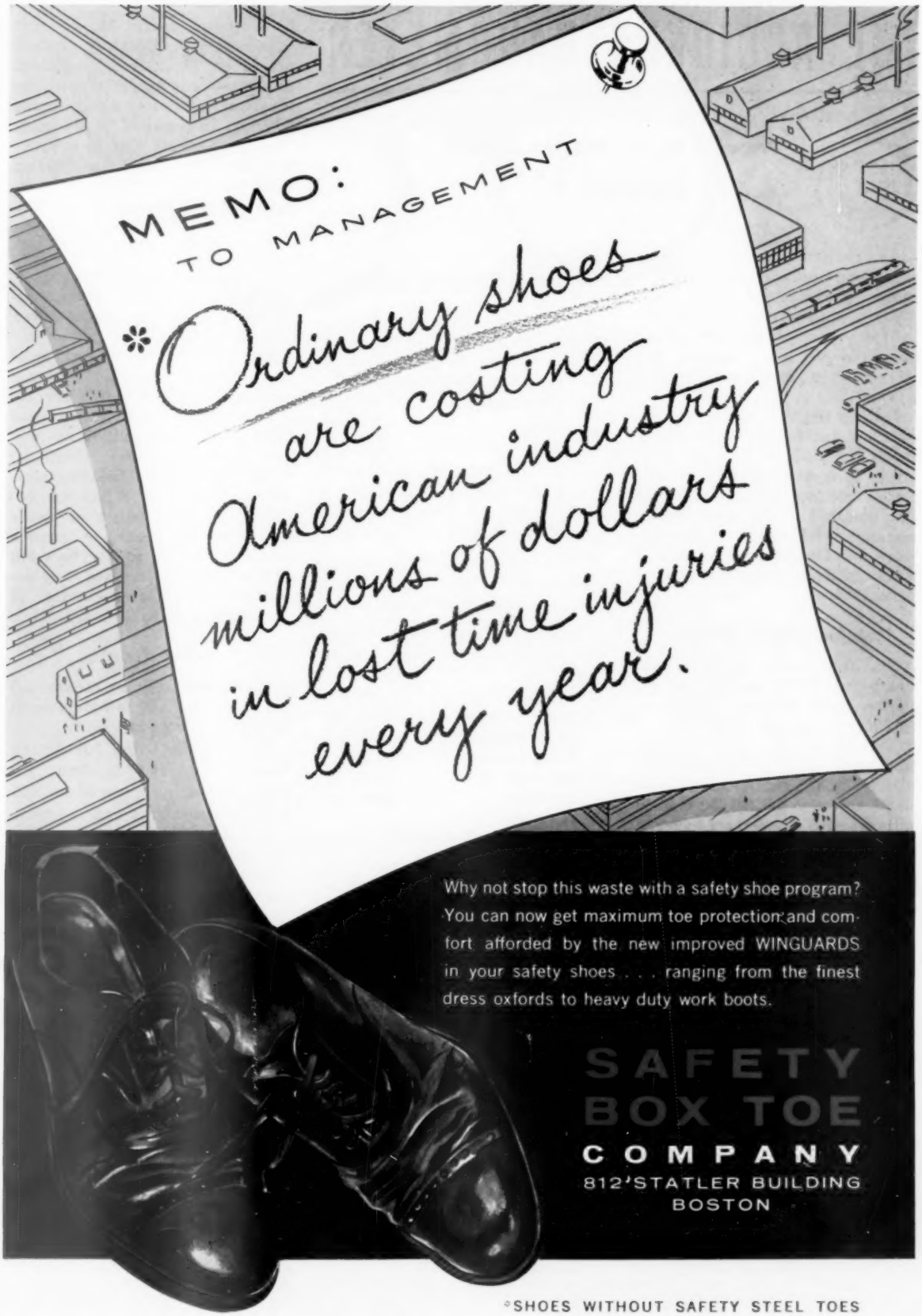
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THE ACCIDENT BAROMETER

Prepared by the Statistics Division,

National Safety Council

ACCIDENTAL DEATHS in July numbered approximately 8,600, a reduction of 6 per cent from July a year ago. There were decreases in deaths from home and public non-motor-vehicle accidents and increases in motor-vehicle and work.

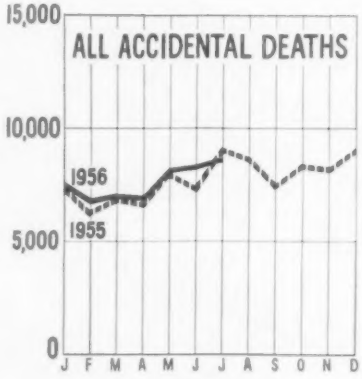
During the first seven months of 1956, accidental deaths numbered about 53,500, or 4 per cent above last year. Most of the increase occurred in motor-vehicle fatalities but deaths from public non-motor-vehicle accidents also were up. Deaths from home and work accidents showed no change from 1955.

Motor-Vehicle Deaths

The July total of motor-vehicle deaths was 3,570, an increase of 5 per cent over last year. Compared to 1954, it was up 17 per cent.

Deaths for the seven months numbered 21,730, or 9 per cent above 1955. The seven-month death rate per 100,000,000 vehicle miles was 6.5, a 3 per cent increase over 6.3 in 1955.

Of the 46 states reporting for seven months, 13 had fewer deaths than in 1955 and 33 had more deaths. Reporting cities with populations of more than 10,000 had an increase of 1 per cent for July and 7 per cent for the first seven months of the year.



	1956	1955	Change
July	8,600	9,100	— 6%
Seven Months	53,500	51,500	+ 4%

Regional changes from 1955 in the seven-month death totals were:

North Atlantic	+ 4%
South Atlantic	+ 9%
North Central	+ 6%
South Central	+10%
Mountain	+16%
Pacific	+18%

Work Accidents

Deaths from work accidents numbered 1,300, or 100 more than in July last year. The total for seven months was 7,900 — no change from 1955.

The July frequency rate per million man-hours for plants in community council contests was 6.81, an increase of 35 per cent over last year. The July rate for plants in 16 sectional accident prevention contests conducted by the National Safety Council was 5.94, an increase of 2 per cent. The seven-month rate in community council contests was 5.81, up 8 per cent, while in sectional contests it was 5.42, down 2 per cent.

Public Deaths

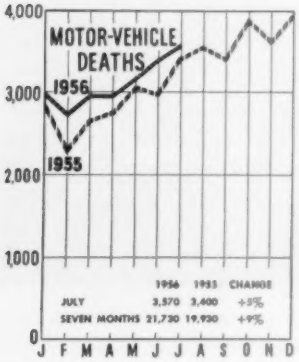
Public non-motor-vehicle accidents in July resulted in approximately 2,100 deaths, or 400 fewer than last year.

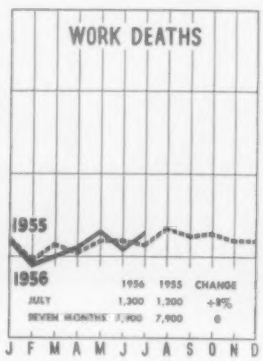
The January-July death total was 9,800, an increase of 2 per cent over 1955. There were increases in deaths from falls and transportation accidents; decreases in burns and drownings; no change in fatal firearms accidents. Most of the increase occurred among persons 65 years and over, but deaths of persons 15 to 24 and 25 to 44 years old also were up. Decreases were recorded for children under 15 and persons 45 to 64 years old.

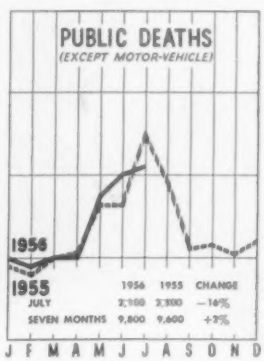
Home Deaths

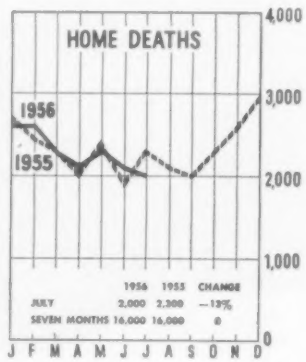
The home accident death toll for July was 2,000, a reduction of 13 per cent from last year.

The death total for seven months was 16,000, about the same number as occurred in 1955. Increases in burns and mechanical suffocation deaths were offset by decreases in fatalities from falls and firearms accidents. Poisonings numbered about the same as last year. There were increases in deaths of children under 15 and persons 25 to 44 years old with decreases in the other age groups.









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Cleaning & Anti-Fogging Fluid, Twelve 12 oz. cans	per carton, $12.50
Magic Heavy-Duty Paper, 18 giant refills (760 sheets ea.),	per carton, $11.60

All prices F.O.B. shipping point

Exchange all your other Stations for Magic FREE

Magic Lens Tissue
America's leading Eye-aid for Safety.

Magic Heavy-Duty Cleaning Station
Science's answer to Grit, Fog, and Grime.

The Silicone Paper Company of America, Inc., 75 E. 45th St., New York 17, N. Y.

THE SAFETY VALVE

Nothing human is alien to me

—TERENCE

Anniversary Greetings

OUR CONGRATULATIONS to a contemporary publication—one which has served transportation for 100 years.

Starting in November 1856 as *Western Railroad Gazette*, the paper became *Railway Age* in 1870. That century has seen astonishing changes in railroading.

The *Gazette*, its successor admits, wasn't much of a paper. It wasn't addressed to railroad men and there was nothing in its four littered pages that would help them to run a railroad. Its audience was chiefly the traveling public and its advertisers were mostly railroads. Other products and services advertised were hotels, clothing, patent medicines, tobacco, jewelry, business schools, banks, and stock brokerage.

Reader pages were filled with praises of the routes and services of railroads that advertised, and horrendous tales of accidents, lateness, rudeness, and discomfort suffered by those who patronized non-advertisers.

When the first issue came off the press, rail transportation was really primitive. The air brake, automatic coupler, sleeping car, dining car, block signals and other aids to safety and comfort were still unknown. Accidents were frequent and only the speed limitations of the eight-wheel locomotives kept many mishaps from becoming large scale disasters.

Not all the progress in railroading has been evident to the laymen. Metallurgy has played its part in faster and safer transportation. Bessemer's process made reliable steel available in sufficient quantities for the railroad expansion of the last century.

Under crusading editors, *Railway Age* battled for such improvements as standardization of track gauges, standard nuts and bolts, the automatic coupler, standard time, and accident prevention.

In 1910 *Railway Age* initiated a campaign for the general adoption of a safety movement started on the Chicago & North Western by Ralph C. Richards, general claim agent for the road, who was one of the founders of the National Safety Council and later became president.

Roy V. Wright, a former managing editor, served as vice-president and director of National Safety Council for several years.

While there is an encouraging story of progress and much interesting railroading lore in this centennial issue of *Railway Age*, the whole tone of the issue is forward looking. Those who are pessimistic about the future of railroading should take heart.

Which reminds me that NATIONAL SAFETY NEWS has a centennial coming up in 2019 A.D. I am not making any guesses about the topics people will be discussing but I'm sure of one thing: They will still be needing the services of professional safety men.

The Advertisers and Us

The early advertising policies of *Railway Age*, typical of that period, remind us how far publishing ethics have traveled since then. Favorable and unfavorable notices are no longer used as bait or blackmail. Any publication that depends on such tactics doesn't last very long.

This question of relationship between editors and advertisers has been on my mind for some time. I had been planning to write a piece about it for sometime, but couldn't put the words together.

Somebody else did it for me. Wheeler McMillen, who writes a chatty column each month in *Farm Journal*, put in words something I had been trying to express.

"Neither this magazine, or any other that we know of, could get out 12 issues a year without the advertising revenue," says Mr. McMillen in an ad in *Advertising Age*. "Advertisers buy space because they want to talk to you, to tell you about their products, or sometimes just to inform you about their business policies. They take a great deal of pains to make their messages interesting . . .

"The only value we can offer advertisers comes from the fact that people read the magazine and have confidence in what they read," Mr. McMillen continues. "If enough people are sufficiently interested to read it and have confidence in what they read, the advertiser figures that a reasonable percentage of them will look at his message.

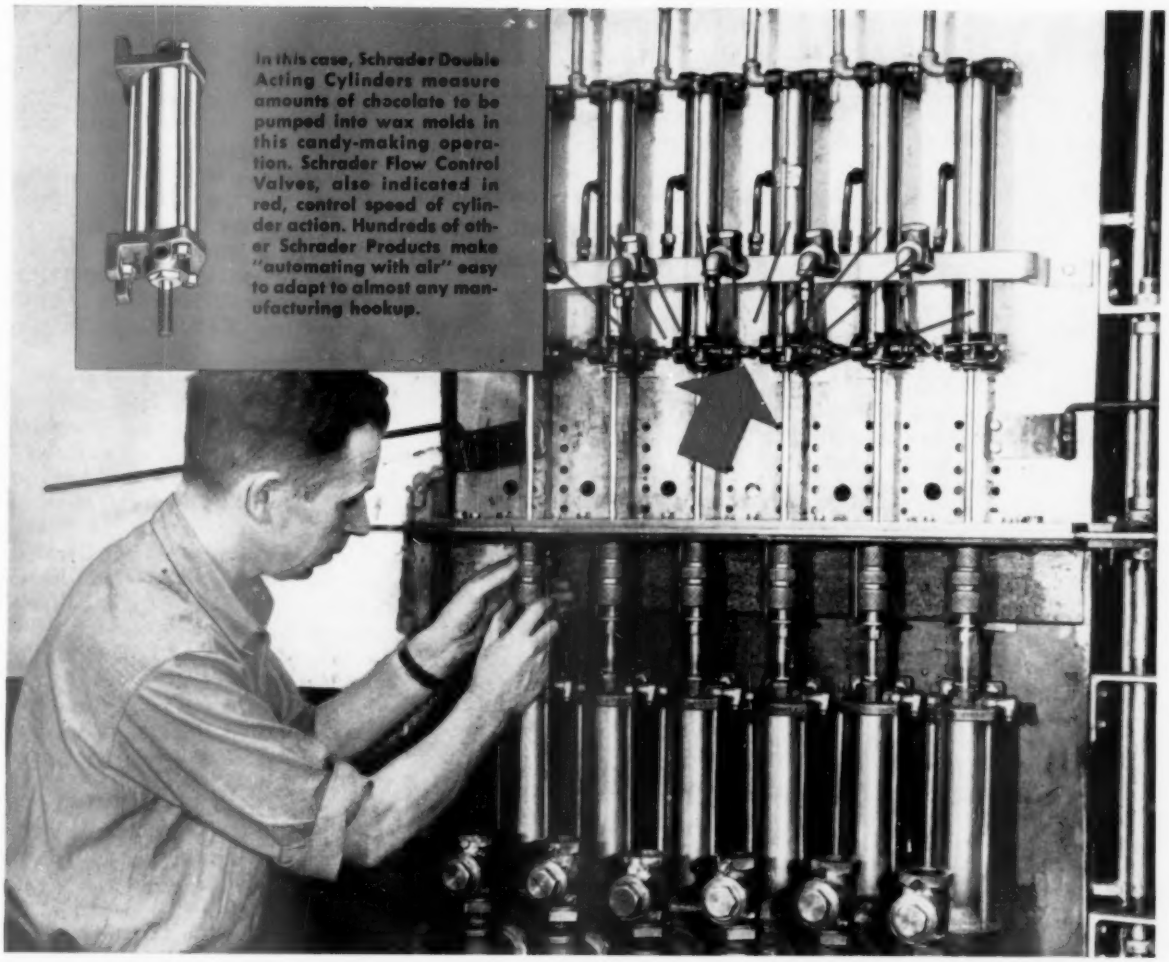
"Another element is equally important to him. He knows that if those who do read the magazine have confidence in its integrity and accuracy, if they like it because they believe it's trying to help them, he knows they are likely to see and believe his message."

So, Mr. McMillen concludes, it's easy to edit for advertisers. You just do your utmost to be useful, correct and fair to all readers. In our case, we try to help them prevent accidents—to get more for the safety dollar. In doing that, we are happy to have had a part in developing the safety market.

The New Products section is an important part of each issue. The items mentioned here are believed to be reliable and applicable to our field and publicity is not dependent on purchase of advertising space.

Many ads submitted by concerns whose credit is A1 are turned down because the product does not conform to accepted standards or because copy is too exuberant. We are happy to report that most advertisers have been quite cooperative in revising copy.

Carman Fish


In this case, Schrader Double Acting Cylinders measure amounts of chocolate to be pumped into wax molds in this candy-making operation. Schrader Flow Control Valves, also indicated in red, control speed of cylinder action. Hundreds of other Schrader Products make "automating with air" easy to adapt to almost any manufacturing hookup.

Schrader Air Products fill candy molds with chocolate safely measured to ± 1 gram

Problem: To mass-produce candy figurines, filled solid with chocolate—a tricky sweet to handle. **Solution:** One Buffalo company uses a battery of Schrader Air Cylinders which measure the chocolate to within one gram, and precisely, neatly, swiftly fill the figures.

The uses of Schrader Air Products are limited only by producers' imaginations. Versatile, safe, simple and fast, the hundreds of different units in Schrader's complete line can be employed singly or in combinations to perform automatic operations. And wherever air is used, economies are gained that increase its efficiency even more.

Think air whenever you think automation—in holding or positioning work, moving scraps or chips, or synchronizing actions. Upon request, Schrader engineers will assist you in planning for your best use of air, and in selecting the products best suited to your applications. Outline your problem and we'll be glad to help. Or send for the latest informative booklets which show Schrader Air Products that will simplify your production.

Schrader®
ESTABLISHED IN 1844

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
452 Vanderbilt Avenue, Brooklyn 38, N. Y.

FIRST NAME IN THE USE OF AIR
FOR INDUSTRIAL PRODUCTION AND CONTROL

CONSULTATION CORNER

By George MacDonald, *Industrial Department, NSC*

Got a problem in accident prevention or occupational hygiene? Questions are answered by mail, a few of general interest being selected for publication here

More Fumes from LP?

Question. At a meeting a discussion was held regarding the use of LP gas in fork lift trucks in place of gasoline. Someone stated that there was more carbon monoxide in the exhaust gases of an LP gas-powered engine than from a gasoline-powered engine. We are thinking of converting our unit in the future and would like your advice.

Answer. We can only pass on to you the experience of some of our members who have made conversions from gasoline to LP gas. Various reports are in circulation concerning the comparative amount of carbon monoxide produced by gasoline and LP gas engines. These reports show a variation, but the gasoline engine produced from two to 20 times more carbon monoxide than the engine powered by LP gas. While it is understandable why the variation exists, it is also significant that every report shows advantages in favor of LP gas engines.

Also, unofficial reports from members who have made conversions to LP gas show that, in general, atmospheric pollution is less. This includes objectionable products of combustion other than carbon monoxide.

Another advantage reported for LP gas is longer periods between overhauls.

Storage Battery Explodes

Some time ago I sent you information about an accident involving a storage battery explosion injuring an employee. I asked for information about batteries, their characteristics, and safe practices to follow in order to prevent another accident.

After receiving the Council's excellent Data Sheet D-246 about storage batteries, safety instruction cards, and the staff engineer's personal experience with the subject we were able to investigate in more detail. I thought you might be interested in what we

found. The accompanying illustration shows the battery.

We found that the battery was on the charging rack with the caps off. An arc was created between the terminal of the battery and the charger. The charger was a new machine and the employee was experimenting with the equipment and terminal clips.

We have reviewed the materials and discussed this accident at our district safety meetings so that everyone will profit from our experience. Thanks for the complete information that the Council sent.

A Job for Experts

Question. Recently we received a contract for making repairs on a combination passenger and freight ship. One of the jobs involves cutting out a plate about 8 ft. x 10 ft. with a torch from the top of a ship fuel tank, then welding in a new plate.

Our regular welders have not had this type of work before and we would like to know the safe practices to follow.

How about flooding this tank with water to within a few inches from the top?

Answer. You are getting into an operation which is fully covered by specific regulations. In general, operations of this kind come under the supervision of the United States Coast Guard, and we would strongly recommend that you get in touch with the Coast Guard's Merchant Marine Inspection Service in your locality.

Operations of this kind are generally covered by National Fire Protection Association Pamphlet No. 306, *Standards for the Control of Gas Hazards on Vessels to be Repaired.* The legal requirements are covered in the "Tank Vessel Regulations" and "General Rules and Regulations for Vessel Inspection" of the United States Coast Guard.

In order to clarify the following information, it is evident that bunker C oil would be classed as a combustible liquid, being any liquid having a flash point above 75 F. With this in mind, we quote in full paragraph 113, section 1, of the NFPA Pamphlet No. 306 referred to above:

113. Vessels other than tank vessels anywhere. On any vessels which have carried flammable or combustible liquid in bulk as fuel or cargo, whether in a repair yard or elsewhere, no repairs involving hot work shall be made in and on the external boundaries (shell, tank top or deck) of cargo tanks, fuel tanks, oil pipe and fuel lines and heating coils, unless such compartments and pipe lines, deemed necessary by the Certificated Gas Chemist, have been cleaned or inerted to meet the appropriate designation requirements of section 2, paragraphs 220—except that the application of 224 (b) may be used only in the case of repairs not involving tank top or decks of tank boundaries. In such cases paragraph 224 (b) may be modified by partially flooding with water provided that any hot work is performed at least 3 feet below the water level; provided further that the gas content of the atmosphere above water does not exceed ½ of 1 per cent by volume in air. In no case shall internal hot work be permitted within any compartment or space unless the compartment in which the work is to be performed is in such a condition as will the requirements of section 2, paragraph 221. Repairs or alterations shall not be undertaken until a Gas Chemist's Certificate is obtained.

Some other pertinent definitions

—To page 139

Because safety is your business...

CURTISS-WRIGHT RADIAMETER

The ultra-sensitive Curtiss-Wright Radiameter will tell you what none of your senses can—that the lives of citizens, workers, or fire-fighters are exposed to deadly radiation. Many organizations are now using beta or gamma rays (over 400 in New York City alone), but fire departments often have no previous information that plants, laboratories or X-ray clinics are potentially dangerous. Thus, it is an important part of safety engineering to check for radiation . . . as a routine step of industrial fire inspection . . . as a first precaution when arriving at a fire scene.

No bigger than a camera, the Curtiss-Wright Radiameter slips easily into your coat pocket . . . accurately monitors radiation energies from 1200 kev down as low as 15 kev . . . has two ranges: 0-25 mr/hr and 0-1 r/hr. It operates on a single flashlight cell . . . weighs only 2 lbs. Made of cast aluminum, it is extremely rugged, waterproof, easy to read and interpret.

Accessories to multiply or divide both ranges by 10 are available. Also a push button on-off switch, attractive leather carrying case, and radium calibration source.

Order direct today, or write for further details.
Nuclear Equipment Sales Department

ELECTRONICS DIVISION
CURTISS-WRIGHT
CORPORATION • CARLSTADT, N. J.

THE SAFETY LIBRARY

Books, pamphlets and periodicals of interest to safety men

By Ruth Parks, Library Bureau, NSC

The Industrial Nurse's Job

Today's Industrial Nurse and Her Job, by Erna Barschak, Ph.D., associate professor of psychology, Miami University, Oxford, Ohio. Published by G. P. Putnam's Sons, New York, 1956; 113 pages. $3.20.

THIS BOOK is a compilation of facts obtained by the author in a study of the functions of the nurse in industry.

Research was financed by a grant to Miami University from the American Nurses' Association, and is the first such study aided by that organization. It was conducted among nurses in 130 industries in Ohio Valley employing more than 131,000 employees. The facts were derived from questionnaires directed to the nurses and workers.

The author had the cooperation of the Ohio State Nurses Association, the West Virginia State Nurses Association and other competent sources, including the Ohio Industrial Nurses Association in Cincinnati. She visited plants and interviewed industrial physicians, industrial consultants, personnel directors and safety directors to obtain a complete picture.

The findings of this study are summarized in the concluding chapter and recommendations are suggested.

This is a book that should interest everyone in the field of industrial health. It is a step in the right direction and was much needed.

JANE S. WEIR, R. N.

The Accident Syndrome

The Accident Syndrome, the Genesis of Accidental Injury, a Clinical Approach, by Morris S. Schulzinger. Published by Charles C. Thomas, 301 E. Lawrence Ave., Springfield, Ill., 1956; XXIII plus 234 to 304 pages; $6.00.

THIS BOOK represents the result of the compilation of 35,000 accidental injury records in the experience of one clinic over 20 years. These are injuries from industrial accidents, home, public, and other types of accidents.

Since Dr. Schulzinger has been interested in accident prevention for many years, he has taken pains to get a more complete description of each injury than is usual in medical practice, and in particular more than is usual in compensation medical practice.

The raw statistics broke down into 5,200 injuries in home and public accidents, 27,200 job injuries, and a group of 2,396 accidents to 2,085 individuals who are considered to be maladjusted to some extent. Essentially these are the group who eventually appeared in the file of non-collectible bills and who were consequently judged to be financially irresponsible and probably otherwise irresponsible.

The organization of the book is unique in that the major findings and the conclusions are summarized in the first 33 pages. This is followed by a short discussion of concepts of accident causation, the statistical tables and charts, and finally by a more complete discussion of the possible personal causes of accidents (in 58 pages), a bibliography, and an index.

The findings are not particularly surprising to those who have studied accident statistics over a period of years. Probably the most interesting findings are the relatively high proportion of accidents observed among the group who are irresponsible and maladjusted and the observation, which is not unique but is a confirmation of other studies, that there is no simple solution to the personal causes of accidents in finding and eliminating the accident-prone group.

In this, as in a number of other studies, it is observed that (1) accident proneness is not something which is a fixed and traceable personality characteristic but is something which occurs to individuals from time to time and that (2) the individual, any individual, may become accident-prone as a result of any one of a number of types of personal maladjustments and will then fall out of the accident-prone group when the cause of his personal troubles has been removed or when his difficulties have been satisfactorily resolved.

An interesting observation is the cyclical annual pattern of accident distribution both in home and public accidents and in industrial accidents, and the cyclical daily pattern of distribution of non-industrial accidents.

Both the collection of accidents and the conclusions and the method of arriving at the conclusions are interesting reading, although this reviewer is not impressed with the attempt which is now so very common, to warp the essentially complicated practice of accident investigation into the relatively simple syllogism of epidemiological investigation. This is a personal opinion and does not detract from the fact that we have here a useful and significant book.

F. A. VAN ATTA

BOOKS AND PAMPHLETS

Aeronautics

Accidents in U. S. Civil Air Carrier and General Aviation Operations. Calendar Years 1954-55. Civil Aeronautics Board, Washington 25, D. C., 91 p.

General Aviation Accidents (Non-Air Carrier). A Statistical Analysis. Calendar Year 1955. Civil Aeronautics Administration, 1956, 16 p. For sale by the Superintendent of Documents, Washington 25, D. C., 25c.

Chemicals

Fire and Explosion Hazards of Organic Peroxides. National Board of Fire Underwriters, 85 John St., New York 38. 1956, 60 p. NBFU-Research Report No. 11.

Fire Protection

Building Exit Code. National Fire Protection Association, 60 Batterymarch St., Boston 10. 224 p. 1956 revision, $1.00.

Occupancy Fire Record—Furniture Factories. National Fire Protection Association, 60 Batterymarch St., Boston 10. 1956, 12 p. Fire Record Bulletin FR 56-3, 50c.

Occupancy Fire Record—Retail Lumber Yards. National Fire Protection Association, 60 Batterymarch St., Boston 10. 1956, 11 p., Fire Record Bulletin FR 56-5, 50c.

Hospitals

Safety Standards—Oxygen Therapy Equipment, Refrigerated. Underwriters' Laboratories, 207 East Ohio St., Chicago 11. 1956, 22 p.

Petroleum Industry

Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents. American Petroleum

—To page 142

ACCO Registered* Wire Rope Slings

Get This Flexibility with Cable Laid Construction In--

THE SAFEST SLINGS MADE

• Cable Laid Slings are really different. These specialized slings combine the flexibility of manila rope with the strength of steel. And to this extreme flexibility they add freedom from crankiness and resistance to kinking. The result is a sling which handles easier—saves time—cuts operating costs.

This performance is possible only because of the combination of special wire rope construction with ACCO's patented DUALOC endings. GALACCO coating, an ACCO exclusive, keeps Cable Laid Slings bright and clean and imparts maximum corrosion resistance.

Safest Slings Made • ACCO Cable Laid Slings, like all of the other slings in ACCO's complete selection, are Registered—incorporate extra safeguards, which make them the safest slings made.

Each individual component, made from the highest quality material suited to its use, is tested before assembly—must prove to have strength equal to or greater than the sling body. These components are then assembled into slings according to precisely-engineered designs which have proven their safety and reliability in extensive field tests.

Each completed sling is then proof-tested at twice the load-carrying capacity for which it is rated. Then, and only then, does it receive the coveted registration certificate and tag.

Get the details on Cable Laid, or any other ACCO *Registered* Wire Rope Slings, from your distributor—or call the nearest ACCO district branch below.

FREE FOLDER: Write the Wilkes-Barre office for your copy of new folder **DH-532** which gives details on ACCO *Registered* Cable-Laid Slings.

*Trade Mark Registered

ACCO

Wire Rope Sling Department, American Chain & Cable Company, Inc.

Wilkes-Barre, Pa., Atlanta, Chicago, Denver, Houston, Los Angeles, New York, Odessa, Tex., Philadelphia, Pittsburgh, Portland, Ore., San Francisco, Bridgeport, Conn. In Canada: Dominion Chain Co., Ltd., Niagara Falls, Ont.

DuPont QUILON Chrome Complex Processed Upper Leather which "promises better grain structure, shape retention and water resistance; better resistance to water-borne chemicals and perspiration; and better finish, finish adhesion and appearance subjected to wear."
Dow Corning SYLFLEX Silicone-Treated Upper Leather which "repels water and water-borne chemicals, keeps them from soaking into the fibers and still permits the leather to breathe. The leather stays flexible . . . dry . . . is protected against deterioration caused by perspiration . . . dries out more quickly."
Quilon
Sylflex
HY-TEST
SAFETY SHOES
Now in All Four WATER-REPELLENT Leathers
Retan
International Shoe Company RETAN Upper Leather which is processed to meet the need for a good and rugged, yet economical water-repellent safety shoe.
Rosite
International Shoe Company Famous ROSITE Upper Leather which is oil-treated to resist water and water-borne chemicals effectively. International's tanneries select only the choicest of leathers for ROSITE processing to assure long wear and best results.
Also, the mellow pliability of the leather provides complete comfort to the wearer.
"Built for the Job" is the keynote with HY-TEST! And when you have a need for safety shoes to repel water and water-borne chemicals, you also have a choice of FOUR upper leathers designed to meet that need. Only HY-TEST can offer this selection.
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927 N. 3rd St., Philadelphia 23, Pa.
Teletype: PH 476

Let's Back The Attack!

We've lost ground. The steady improvements we were making until 18 months ago have yielded to a persistent, month-after-month rise in the highway death toll. What we need now is the war-time fervor to fight the war on accidents—the same fervor and united effort America has put into every other war

By NED H. DEARBORN
President, National Safety Council

I HAVE a feeling it may have come to the attention of some of you that this is an election year.

It is even possible that some of you may have learned, through the miracle of radio and television and the press, that it is the custom of presidential aspirants, among others, to make speeches.

You may have noticed, too, that these gentlemen are inclined to peer into the future toward the "new look," and the "new world," and the new this, and the new that.

Like all presidentially-inclined speakers, I too will take a look into the future and its problems and its promises.

But unlike either of the two presidential candidates, I shall focus my crystal ball on a national problem neither of them included in his forward look—the problem of the rising accident toll that is confronting the United States.

I do not need to remind anyone that at this moment the war we are waging on accidents is not going the way we want it to go.

The ugly fact is that we have lost ground in this war during the last year—or, as a matter of fact, during the last 18 months. We have suffered reverses that we cannot realistically ignore.

This is especially true in the field of traffic accidents, where the steady improvements we were making until 18 months ago have yielded to a persistent rise, month after month, in the highway death toll.

As we meet here today we face the tragic fact that unless we suddenly hit upon a plan of attack more effective than any we have devised up to this moment, the traffic death toll this year will reach an all-time high in the history of our nation—a dreadful figure of more than 41,000 deaths, and possibly even 42,000!

You and I need no peep into the future, we need no crystal ball, to tell us that here is one of the biggest problems facing America today—and that we had better give it high priority for solution, or we shall have forfeited one of our chief claims to leadership in a civilized world!

But let us take a "new look" at this accident problem and see if our earnest efforts to solve it are doomed to defeat or have merely run into a temporary stalemate.

Today we are interested in every field of accident prevention—industrial, traffic, home, farm, child and public. I know it is the hope and prayer of every one of us that out of this great Congress may come ideas and plans and inspiration for reducing the loss of life and limb and property from accidents in every one of these areas of our daily activities.

But it is on our streets and highways that we have met the heaviest reverses in our war on accidents. I feel, therefore, that without lessening a single one of our efforts to bring other types of accidents under control, we should train our heaviest fire on our most troublesome enemy—traffic accidents.

The emergency of this mounting traffic toll is so great, in fact, that it can be met only by the combined knowledge and ability and experience and

This article is the text of President Dearborn's address at the Annual Meeting, 44th National Safety Congress, October 22, 1956.

effort of every one of us, regardless of our specific field of interest. And it calls, too, for the united effort of the many, many thousands of splendid public-minded men and women who make up the vast and powerful army of volunteer safety workers.

You who are in industry, for example, have so ably waged the fight on accidents that in terms of the actual toll a worker is twice as safe on the job today as he is off the job. Your safety know-how and leadership and resources are desperately needed, more than ever before, in the war on traffic accidents.

So as we look into the future today for the "new look" in the war on accidents, may I ask that all of us keep the threat of the traffic accident problem sharply in mind.

And what do we see as we look into the future?

As a realistic man who believes only what he sees, I peer into the future, and I am afraid of what I see.

I see the awful specter of almost 42,000 traffic deaths in this very year.

I see 60 million cars now on the highway — too many of them driven by people who seem to be in a frantic hurry to get where they're going, and grimly determined to get there, regardless.

I see the alarming estimates of our statistical experts that by 1966 this almost endless line of moving cars will have stretched to 80 million—and that by 1975 it will have reached the fantastic figure of 104 million!

I see the shocking forecast that by 1966 the death toll on America's highways may well be 54,000. And by 1975 — dare we guess?

I see more and more people driving more and more cars more and more miles, and driving them faster and faster.

I see the ever-growing line of traffic and the ever-lengthening miles of travel far out-distancing the new and better and safer highways we need so desperately and acquire so slowly.

I see the mounting urge for thrills, thrills and more thrills behind the wheel far surpassing man's ability to cope physically, mentally or emotionally with this incalculable challenge to his mind and body.

And I see all this accepted with an amazing apathy and a strange resignation by a public which can be adequately aroused to almost every other emergency.

Yes, more and more traffic, more and more accidents, more and more death and destruction and blood and screams and tragedy and heartbreak and disaster on the highway—this is what I see if I peer into the future as a man who is completely realistic and believes only what he sees.

But then I remember that this nation was not brought into freedom, nor has it been advanced to greatness by men who limited their citizenship to realism or narrowed their vision to what they saw before them.

Realistic and logical they were, to be sure. But more—much more —than that. These were men of faith and courage and hope, who stoutly rejected the discouraging prospect as being the final or inevitable conclusion until they had given prodigiously of their strength and skill and resources to prove that impending defeat could be turned into glorious victory.

Could America be what it is today had these patriots of yesteryear accepted with patient resignation a situation they knew could not continue without dishonor to their country? I believe it could not!

Could they live among us today and fail to act with vigor against a needless toll of 90,000 dead each year — 40,000 on the highway alone—in a nation dedicated to the principle that human life is precious above all? I believe they could not!

Could these men believe for a moment that the courage and faith and hope that met and conquered the crises which so continuously beset our infant nation are not abundantly available today to meet and conquer a tragic and frightening accident toll which I believe has reached the proportions of a national emergency? I am sure they could not!

So let us now acquire from the memory of such men a measure of their strength and courage and hope and faith and vision, and add it to our own. And now let us peer

—To page 148

Tranquilized

An expert reports that most accidents occur when people are either in a high or a low mental state. He points out that emotions are potent factors and need control.

So, if we nervous, fidgety, irritable, bundles of tension want to stay around a few years, we'd better try to calm down.

Our emotions were designed to make us fight, or run, in the face of danger. In our complicated society you appear anti-social if you haul off and bust someone everytime you'd like to. And, if you run, there's no place to go. Consequently, we get heeby-jeebies trying to figure out which is best to save—our face or our other end.

At least science seems to be trying to come to our aid. The pill rollers claim it may be possible for us to control our pace, control our mood, control our health, control our drinking, and control birth by the type of pills we take. Sort of allows us to arrange our mood to fit the occasion.

Now, if they could just devise a safety pill which everyone could take on getting up each morning—to get them through the day without being mangled—they'd really have something.

Don't worry about the tense, eager beaver types taking over if you play it cool and relaxed. They'll be eliminated from competition by accidents or heart attacks.

Hedge for the future like me. Take your tranquilizer and be your calm, kind, lovable self.

ROBERT D. GIDEL

Medical Service for Small Plants

A PLANT MEDICAL SERVICE to be effective should be tailored to fit the particular needs of a given plant. How this will be done will vary from place to place and will have to be individualized to fit with the conditions and services available.

However, no matter how the service may differ from one plant to another, the objectives should be the same. A good plant medical service should:

1. Provide for effective care of all industrial injuries and occupational diseases.
2. Control possible toxic hazards.
3. Include a program of practical placement of employees through pre-placement and periodic in-service physical evaluations.
4. Provide a program of health improvement by counseling and education.

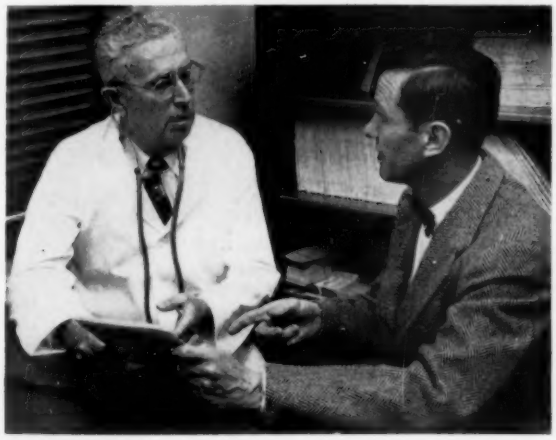
Here are some steps showing how a plant superintendent can set up a medical service in a plant too small for a full-time doctor or nurse.

By **PAUL W. RUSH, M.D.**

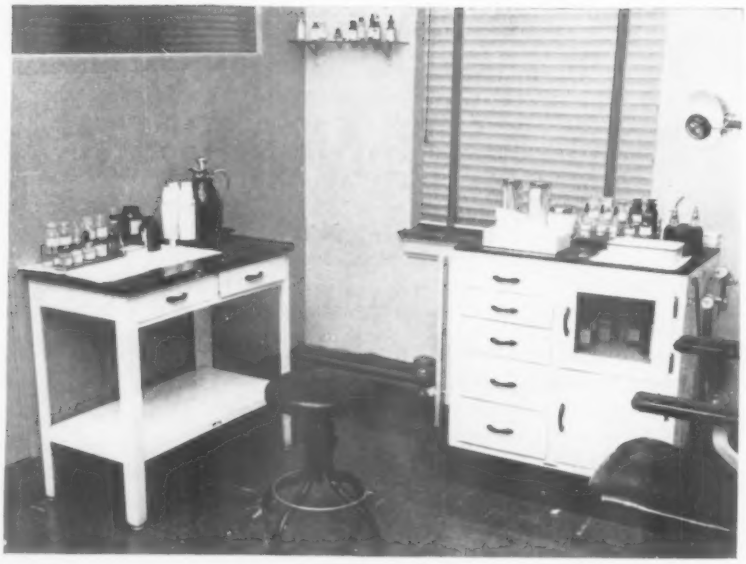
DR. PAUL W. RUSH is Medical Director, Corn Products Refining Company, and Health Director, Food Section, National Safety Council.

(—Turn page)

ONE OF THE MOST important jobs is to select the right doctor. If your insurance carrier has a competent, cooperative physician designated in your area, good. If not, it will be necessary to make mutually agreeable arrangements with a qualified physician who has the time and the desire to do industrial work. In this selection you should satisfy yourself as to the ability and desirability of the doctor to be used. He may not be the busiest or the most popular. He probably will be someone giving special attention to industrial cases or a general practitioner. Visit him at his office and make his acquaintance.



WORK OUT MUTUALLY agreeable arrangements with him. Have him visit your plant to learn your medical needs. Make him part of your supervisory staff. Obtain his phone numbers, office hours, who to call in his absence, and his daily schedule. Post this information prominently on the wall of the first-aid station or in the first-aid kit under a protective covering. Take with you a copy of the American Standards Association's Code Z16.1-1954, "Method of Recording and Measuring Work Injury Experience." If the doctor is not familiar with this code, discuss it with him and leave him a copy for future reference and guidance.

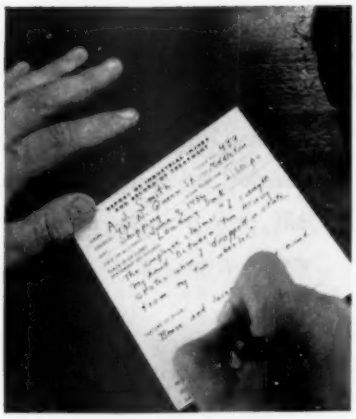


DESIGNATE some conveniently located area for medical service. Provide adequate space, equipment, and supplies for work to be done there and arrange definite provisions for transporting injured to doctor's office. Consult your physician in setting up facilities for medical service.

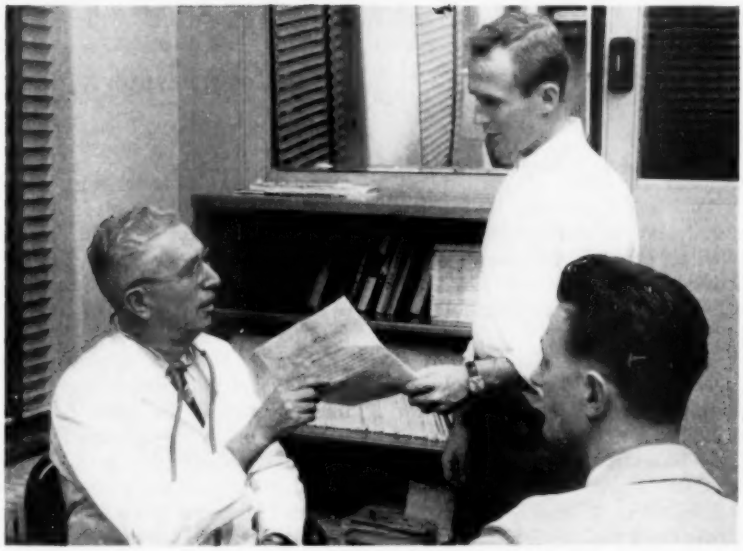
MAKE SOMEONE responsible for maintaining stock of medical supplies, equipment, and condition of medical station. Ask the doctor for help in planning first aid and other medical services, particularly handling and transporting of seriously injured.

IF YOU EXPECT to handle minor injury first aid, have your doctor or the Red Cross train one or more employees who are usually available—perhaps all office help, all foremen, or local managers—in sound first-aid techniques. Give these persons authority to take charge in event of a serious injury.

HAVE YOUR DOCTOR provide a set of standing orders for first-aid treatment or adopt one that has already been published. Give special consideration to any injuries or occupational diseases that may occur frequently. Post this list in first-aid room, preferably under glass or protective cover.



ADOPT a workable report form and cumulative record keeping system or use one recommended by your insurance carrier. See that an accurate and complete report is filed on every injury. Insurance company will want a copy on any case that may result in temporary or permanent disability.



TAKE AS MUCH clerical work as possible off the doctor's hands. Have a clerk make up as much as possible of all reports and send them with patient when he visits the doctor. This will assure better records for your files and make the doctor's job less time-consuming. The doctor will appreciate this.

ASK YOUR DOCTOR to designate a hospital. Visit this hospital and acquaint its supervisor with your needs and how and where to send bills for service. Post the name, address, telephone number, and procedure for admitting patients. Also post the name and phone numbers of one or more of the nearest available ambulances.

(Fiction)

THE DIARY OF A SAFETY ENGINEER

At his 20th Congress, our safety engineer decides to "play it by ear." But this one proves quite different and pays some unexpected dividends

Three Pay-Offs At Congress

By BILL ANDREWS

October 25, 1956

ANOTHER CONGRESS is almost over, and it shares two things with all other Congresses I've attended—it is both much like the others, and also entirely different from them.

In one sense, Congress is a highly stylized dance—the same general pattern of meetings in the same meeting places; the same type of exhibits; the same faces around.

Yes, it is so much like other Congresses that you can map another man's course through it, as I have been doing this week.

But it is also so unique that I refuse to map out my own week, preferring to play it by ear, taking what I want out of it, skipping what I do not want. There have been Congresses which were, for me, mainly a matter of listening to papers at formal meetings. There have been others which were, again for me, valuable mainly because of personal bull sessions with men who had ideas and/or problems which I found instructive.

Three incidents this week paid with interest the time and expense of Congress attendance.

One was a paper I heard—it doesn't matter in what section. I almost skipped it, because the subject announced didn't greatly interest me. But the man who gave the paper was both a friend of mine and one of the better brains in the safety business.

So I went, and found my mind wandering as he pushed through a mass of statistics on the effect of a guarding program he had introduced.

When he finished, applause was listless, and I started to leave. Before I reached the door, a question was put to the speaker. "How did you handle the problem of employee training on those guards? I know from experience that that kind of guard can be a temptation to the employee to evade its use."

Then, in five fast minutes, the speaker gave a compressed statement of the combination of education and enforcement which had been introduced to carry out the new engineering procedure. Standing there in the doorway, I got, in five minutes, an insight into a problem that was worth weeks of study.

The second incident was in the Exhibition Hall. I had made my usual tour, packing a briefcase with brochures and samples, most of them on products already familiar to me, products I had already decided were useful or otherwise. Many were items I had been requisitioning for years.

So, I as I almost completed my tour of the exhibits, I had little sense of accomplishment. I'd renewed some friendships, checked some delivery outlooks, placed a small order or two, collected some gossip about men in the field. But I hadn't learned anything really new.

Then a green and eager salesman at one of the booths buttonholed me. He had a gimmick in the gas warning line, and I dutifully looked at it. And, since I believe deeply in the usefulness of good salesmen to the safety movement, I undertook, after he finished his spiel, to point out several technical inaccuracies in his sales talk. That flustered him and made him unhappy—as I meant it to.

But I didn't want to leave him unhappy, so I looked over the booth for something else to talk about. He had a lightweight mask on display, and I tried it on. It was not only light, but considerably more comfortable than the type I usually have ordered.

So I asked him about its technical properties, and, since he didn't know them, he looked them up in his manual, which meant that this time he had his technical information straight. It looked good, and I ordered a couple of them.

They'll take some field testing, of course, but the maker has a good name, the data given is promising, and the masks *are* comfortable.

So the trip through Exhibition

—To page 143

Accident Crisis Looms, 44th Safety Congress Told

Danger and death on the highways nearing point of national emergency, Dearborn warns delegates

THIS YEAR'S traffic death toll may reach 42,000. By 1966 it might well be 54,000. And by 1975 . . . . .

This is one of the major problems facing America today. It can be averted only by a self-disciplined nation which can embark on a humanitarian peace-time endeavor with the same moral fervor that it has entered past wars.

That was the message which President Ned H. Dearborn brought to the National Safety Council's membership at the Annual Council Meeting which opened the 44th National Safety Congress, Monday morning, October 22. It opened a week in which the organized forces of safety backed the attack on all kinds of accidents, with special emphasis on the mounting highway death toll.

The full text of Mr. Dearborn's address appears on page 17 of this issue.

For several years youth and charm have had a conspicuous spot in the program of the Annual Meeting and this year's representative was Mary Lou Meinders, of Metropolis, Ill., a recently enrolled freshman at Carthage College. Mary Lou was introduced as "a super-active member of the 4-H Club and of the Future Homemakers of America. She has won awards and achieved distinction in gardening, sewing, modeling, music, church work, civic leadership and other fields."

Teen-age driving problems, Mary Lou felt, could be largely solved by three things: parental example, driver training in high schools, and by self-government—not as a substitute for regular channels of law enforcement but as an additional means of setting rules and discipline for young people by those of their own age.

"Young blood is wanted in nearly every line of business—so why not in the safety business?" she asked.

No great nation has ever been brought together so completely as has the United States by the motor vehicle, said William H. McGaughey, vice-president of American Motors Corp., Detroit. The automobile has enabled people not only to see America but also to live in it.

With this development has come a catastrophe of wartime dimensions—one which requires wartime measures, said Mr. McGaughey. There have been overtones of criticism at safety organizations, the automobile manufacturers, and others. Government agencies have been entering the field. Much has been done but the growth of the problem requires even more intensive effort.

Two main areas offer hope for safety progress — community effort and driver education, Mr. McGaughey pointed out, and success along these lines will require the leadership of top men in industry and public life.

Officers Elected

Walter A. Stewart, trustee and former president of American Optical Company, Southbridge, Mass., and the Council's vice-president for homes since 1952, was elected chairman of the Board of Directors.

W. S. S. Rodgers, former chairman of the board of The Texas Company, was elected chairman of the Trustees. Ned H. Dearborn continues as president.

The Industrial Conference

Not included in the printed Congress program, but of great importance in the year round activities of the Council was the annual meeting of the Industrial Conference which held sessions Sunday morning and afternoon. Reports of the year's work were presented by the Council's sections and by the following committees engaged in special projects: Audio-Visual Aids, Congress Program, Industrial Safety Training, Mechanical Safeguarding, Nuclear Energy, Off-the-Job Safety, Publications, Sectional Activities, Small Businesses and Associations, Standards, and Research Projects.

Robert H. Ferguson, assistant manager of industrial relations, Republic Steel Corp., Cleveland, was elected chairman of the Conference, and Gerard O. Griffin, Dravo Corp., Pittsburgh, was elected vice-chairman.

NEXT YEAR . . .

The 45th National Safety Congress and Exposition will be held in Chicago, October 21-25. Headquarters will be in the Conrad Hilton Hotel. Meetings will also be held in other downtown hotels.

CONGRESS FEATURES IN THIS ISSUE

"Let's Back the Attack!"—President Dearborn's Address 17

Officers, Directors and Trustees Elected 34

Congress Quotes—Excerpts from papers 12

Additional coverage of the Congress and Exposition will appear in the December issue.

Simplified Safety For Small Firms

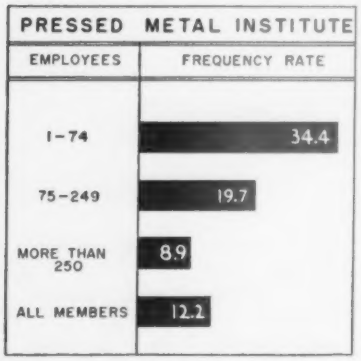
Reach him through his associations, use language he can understand, and promise him tangible benefits. This is the approach NSC's Small Business Program uses with the "little" employer

By A. M. BALTZER

LET'S face it! The real challenge in industrial safety is not the so-called "accident-prone" worker, high-hazard industries or new technical problems; it is simply one of reaching and selling hundreds of thousands of firms which do little, in an organized way, to control work accidents. This is the one big group that needs more attention—and until recently received comparatively little attention. Too many have talked too much about the subject and have done too little about it!

Now, at the National Safety Council we are applying our knowledge of how to reach and sell small firms through the business organizations with the promotional and distributional networks to do a missionary job.

A. M. BALTZER is Director, Small Business Program, National Safety Council.



THIS IS A TYPICAL association report of disabling injury frequency rates by size group. Again and again, the smaller firms need the most help.

Seven Steps to Safety
how management can control work injuries
1921
Plus Costs
OF ACCIDENTS
the NATIONAL SAFETY COUNCIL presents
"Safety Doesn't Happen"
a brand new FREE LOAN film for alert business men
SIGNS OF THE TIMES
CCIDENT PREVENTION . . .
opportunity for expanded service to association members

NSC PUBLICATIONS designed to promote safety in associations and small business: a booklet and a leaflet for small firms (upper and lower left), a film for audience of small film owners (upper right), and a booklet for association executives. Sample publications are free; the film is available on a free loan basis.

What is a small firm? Some writers and speakers define small business in terms of numbers of employees—100, 250, or 500; others use the criteria of volume of production of a certain product or in a certain industry; some merely say that "a small firm is one which is not dominant in its field."

It may be oversimplifying the definition but, for our purpose, the Council is trying to "reach the unreached." Generally, this is the

small, independent firm with no professionally-trained safety man, which has given little thought and effort to preventing work accidents. Our definition excludes the small, branch plants of large corporations because there is at least some advisory control from headquarters. It is the one in which the boss must not only be *responsible* for accident prevention but must *do* the safety work along with a multitude of other duties. Such a firm might be large enough to have one line of supervision between the boss and the workers. If so, then the boss can assign someone to help him as a routine part of safety supervision, otherwise, what is done must be done by him.

A typical small business is just as likely to be in the trades and services field or construction as in manufacturing. Visualize the average retail store, restaurant, lumberyard, homebuilder, dry cleaner, or job foundry and you'll have our picture of "small business."

Let's not simplify the small business too much by offering only a scaled-down program or saying that the principles of accident prevention are the same. The basic principles are the same but the techniques might be different.

For example, a smaller company doesn't necessarily need a *smaller* safety committee or a safety committee at all. As in any company, the employees should "get into the act" but not necessarily through any formal committee, particularly if the company is so small that committees of any type are out of the picture. And while the small company might need basic safety information, it must rely more upon outside sources rather than its own staff for developing the information.

We now approach the problem in a promotional rather than a technical way. This new approach required a change on our part. For one thing, we learned to talk a language the small employer can understand. Unfortunately, many safety engineers give advice which sounds like this excerpt from an article labeled "A Safety Program for the Smallest Plant":

> An executive safety committee composed of key personnel, foremen and supervisors, the plant doctor and nurse, should formulate policies and consider disciplinary matters, reports and suggestions. Through a second committee composed of working employees . . .

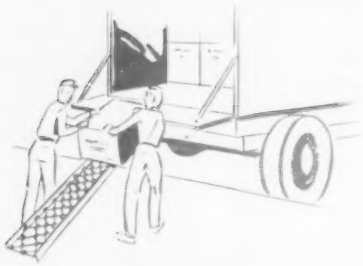
An executive committee, an employee committee, a doctor and a nurse! That doesn't sound much like a small company, does it! To the average small businessman such language is meaningless. To us, it sounds overly formal and formidable!

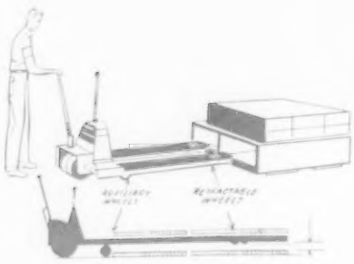
Accident loss statistics are likely to be unintelligible too. For instance, many enthusiastic authors or speakers will say something like this: "The ABC Company spent $500.00 for medical and compensation, therefore, applying the four-to-one ratio, their indirect losses were over $2,000." Maybe, but probably not! With only a few cases to work on, it is almost impossible to convince a small employer that his intangible or indirect losses are that great.

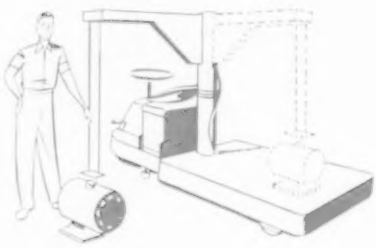
Moreover, most small companies don't directly pay medical and compensation bills; their insurance carrier takes care of that for them. Therefore, they seldom know even their direct losses of medical and compensation, much less have any understanding of indirect losses which may or may not be serious.

—To page 126

Steel Industry Pioneered In Campaign for Safety
H. C. Frick One of First To Attack Vital Problem
SAFETY
NAVARRO CORPORATION
ALLIS-CHALMERS PRACTICES SAFETY
Most thorough EYE PROTECTION PLAN in Pittsburgh
Here's Safety Parley Program
Safety Rates First With Gas Industry
FINANCIAL NEWS
Rheem Co. Excels In Housekeeping
600 Individual Awards Are Distributed By Hines Lumber Co.
TEAMSTERS JOIN MARCH FOR SAFETY
OUR EMPLOYEES HAVE PROVED THAT ACCIDENTS CAN BE AVOIDED
SAFETY...
an every-day, over-all program at Jones & Laughlin
J&L STEEL
Jones & Laughlin
STEEL CORPORATION
BELL TELEPHONE COMPANY OF PENNSYLVANIA
NO JOB IS SO IMPORTANT
AND NO SERVICE SO URGENT
THAT WE CANNOT TAKE TIME
TO PERFORM OUR WORK SAFELY
BETHLEHEM STEEL
Guess who's had the safest day
STER LOCAL UNIONS
JOINT COUNCIL OF TEAMSTERS NO. 40







Planning for

Safer Materials Handling

By RICHARD J. SWEENEY

Better methods and modern equipment in transport, storage and production flow will pay off in lower costs and fewer accidents

THE KEY to a successful safety program in materials handling, as in any other area, is proper planning. Yet there are very few examples of properly planned materials handling programs. The reason for this condition probably lies in the fact that industry ordinarily treats materials handling as a "step child."

Handling cost usually is buried in overhead, which the average department supervisor feels he cannot change. Handling facilities, similarly, are consigned to the outermost and poorest space in the plant, and the department supervisor treats them as a necessary evil.

Supervision of handling and storage operations ordinarily is spread over two or more departments and several supervisors within each department. Each supervisor concerned is inclined to concentrate on the items for which he is solely responsible, since he personally must account for performance in these areas. With no one man responsible for all handling and related tasks, nobody must answer to his superior for proper planning and performance in these areas.

Hazards exist on receiving docks, in storage areas, and in shipping departments which would not be tolerated in production departments. To prove this, let's take a tour through a typical industrial plant and examine the hazards we find in the materials handling operation. The illustrations given here are not imaginary, each one of them I have observed in plants in which I have worked.

The Receiving Dock

We begin our trip on the receiving dock. Except in the most modern plants, the dock is usually too narrow for proper operation of handling equipment, and access to the receiving room is inadequate. On many docks, fork lift trucks and other powered equipment can be used to unload trucks and cars only if these vehicles are spotted directly opposite a door. Docks are often located on the side of the plant toward the prevailing wind, rather than away from it. Since many of them are open, and few are completely closed, docks usually have the hazards caused by wind, rain, snow, and ice.

When docks are narrow, they become cluttered with fork lift trucks, two- and four-wheel hand trucks, dock plates, and similar equipment. Drivers and clerks are forced to walk around, or step over, such items, with consequent risks. This condition is aggravated if incoming shipments are stored on the docks waiting for receiving clerks to write up the papers required for their movement to ordering departments.

There is an inherent hazard wherever men must work near an unprotected platform edge. This hazard seldom can be removed completely. However, some receiving docks are not equipped with adequate bumpers. When this condition exists, trucks backing into such a dock gradually crack and break the lip of the dock. Resulting irregularities greatly increase the danger of accidents.

Just as receiving docks are often inadequate, so are receiving rooms, and for the same reasons. Our company has worked in sev-

RICHARD J. SWEENEY is Associate, Drake, Startzman, Sheahan, and Barclay, Engineers, New York. This article is adapted from an address at the 26th Annual Safety Convention, Greater New York Safety Council, New York, April 19, 1956.

eral plants where the receiving, clerical and storage functions were performed in a main plant aisle. Receiving clerks and incoming merchandise competed for space with fork lift trucks and tractor-trailer trains supplying production. Result, a bad hazard.

Even where this condition does not exist, many other dangers can be found. Receiving rooms seldom have enough light for proper checking of merchandise. They often are small and shipments must be stacked so high that personnel are endangered. Handling equipment bringing in incoming freight from the dock and removing it to production must snake its way through narrow, obstructed aisles, or no aisles at all. Work and storage areas are not clearly marked. Column spacing often interferes with operations, and floor load capacity may be inadequate for the newer handling equipment needed to move larger loads.

Wrong Equipment

Equipment provided may be improper or inadequate. In a recent case, we found a 10,000-lb. capacity industrial crane being used to unload 10-ft. cases weighing no more than 400 lbs. The crane was too large for available aisle space. Every time it entered receiving, clerks working next to the aisle, with their backs to it, were endangered by the swinging boom and crane body.

In another plant we found four-wheel hand trucks whose dead weight was nearly 1,000 lbs. being used to move shipments whose weight averaged not more than 50 lbs. per shipment. More men continually ran the risk of injury by pushing heavy dead weights. Pry bars and rollers often are used to unload heavy palletized or skidded crates of machinery from freight cars or highway trailers. Drums and barrels are moved long distances by use of two-wheel hand trucks.

I remember one instance where one man was expected to move loaded 55-gal. drums by two-wheel hand truck from a receiving and filling operation, across a distance of 100 ft., up a 7 per cent grease-soaked ramp to the floor above, and then put them in storage locations up to 75 ft. away. This operation was a steady eight-hour job in the packaged warehouse of a major oil company.

Equipment may not be used properly. Recently I saw what could have been a serious accident when an industrial mobile crane operator attempted to drag a shipment out of closed van truck by the use of single prong case hooks. As might be expected, the case hooks pulled out of the shipment when tension was applied to the sling. The hooks snapped back toward the crane and one of them hit the operator in the leg with enough force to cause him to "black out" for an appreciable period. If the impact had been a few inches higher, the man might have lost his life. Of course, the crane should not have been used for this job in the first place, but case hooks of this type were never intended for side pulls.

In the receiving operation of a food manufacturer, a clerk attempted to pull a loaded four-wheel truck along the dock. It was raining, the dock was unprotected and slippery, and the cart had to be moved along the dock edge. The clerk lost his footing and slipped down between the dock edge and a rail car, pulling the loaded cart after him. He spent months in a hospital and will be bedridden for the rest of his life.

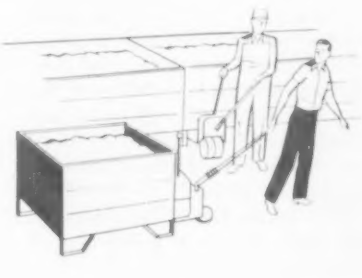
Neglected Maintenance

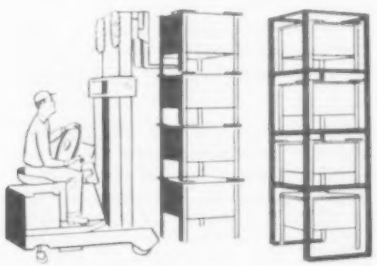
Equipment may not be maintained properly. Fork lift trucks have been observed with leaks in the tilt cylinder packing. This condition reduces the operator's control of the load, increasing the hazard caused by piling shipments in small areas. Wheel bearings of equipment are often improperly packed, causing oil and grease to be deposited on the dock and receiving room floor. Wheels become flattened and spalled, increasing the effort to push trucks. Racks on four-wheel trucks are bent and broken, causing a hazard to the men pushing them.

—To page 102

THESE AID MATERIALS HANDLING

- **Aisle lines and aisles kept clear**
- **Adequate light in both production and materials-handling areas**
- **Mirrors at aisle intersections**
- **Guards around building columns and similar obstructions**
- **Effective ventilation where gasoline-powered equipment is used**





Film of Protection

Recent developments in use of barrier creams for prevention of dermatoses

By LEO ORRIS, M.D.

DERMATOSES constitute the largest group of industrial illness, comprising 65 to 80 per cent of all occupational diseases. The magnitude of this problem was recently highlighted in a survey of more than 100,000 workers in various industries by the United States Public Health Service, which revealed that more than one per cent of these workers had occupational dermatosis within one year. This figure did not include burns, acid and alkali splashes, or infections of wounds.

The annual economic loss from occupational dermatoses in the United States has been estimated at about $100 million in addition to $100 million spent on medical care.[1-3]

A number of preventive measures have been recommended to avert the occurrence of such a frequent occupational disease. These include:[4-7]

1. Preselection of workers and materials
2. Adequate medical supervision
3. Plant hygiene
4. Personal hygiene
5. Adequate washing facilities
6. Protective clothing and equipment
7. Protective ointments

Although workers often resist the use of the preventive measures provided for them, it is nevertheless the responsibility of the employer to furnish all necessary facilities; indeed, failure to do so has, in some instances, been adjudged negligence.[8]

This presentation concerns itself with the last factor listed, protective ointments.

In theory, protective ointments or barrier creams should be simple and effective means of preventing skin irritation. Often, however, they are low on the list of preventive measures, though in some operations they may be the only possible means of protection and in other cases may help to protect the skin from irritants which may escape into the air in spite of other preventive measures.

In some industrial procedures, the face cannot be covered by protective masks and work must be carried on with bare hands because gloves are impracticable. Moreover, although workers often dislike to wear gloves, they do seem to accept protective ointments and there seems to be a distinct psychological value in their use since the worker feels that he is being given necessary and desirable personal protection.

Of great importance, however, is the fact that when a protective ointment is used the worker invariably removes it with soap and water immediately after work and so removes at the same time, whatever irritants are on the skin! Indeed, this has been cited as the major (if not the only) benefit derived from the use of barrier creams. For example, the AMA Council on Industrial Health's recent *Report on Dermatoses Due to Oils Used in Industry*, states:

"Protective ointments do not categorically protect against all of the oils, but they may aid in preventing dermatoses by causing the workmen to wash thoroughly in order to remove them from their skin."[9-10]

Don't Neglect Washing

Instructions regarding the use of protective ointments generally place strong emphasis on repeated washings of the skin and re-applications of the protective. The value of such washing alone has been experimentally demonstrated by Smith and Orris at the Institute of Industrial Medicine of New York University. After groups of mice were painted with a carcinogenic material, some groups were washed and others were not. The incidence of cancer was materially reduced in those

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groups washed with soap and water after being painted with the carcinogen.[11]

In general, protective ointments should be:

1. Non-irritating
2. Should not interfere with normal skin function
3. Actually protective against the specific irritant for which they are used
4. Difficult to rub off and stable under working conditions
5. Easily applied and pleasant to use
6. Easily removable with soap and water

It must be remembered that protective creams are designed as protective, *not* therapeutic agents, and should not be used on the acutely inflamed or infected skin.

Types of Cream

Although there are a great many types of barrier cream, they may all be grouped into two general classifications: (1) water-repellents and (2) oil-repellents. These main groups may then be subdivided according to content and alleged action:

1. Vanishing cream with soap base
2. Ointments providing either water-soluble or water-insoluble films
3. Ointments containing light-screening chemicals
4. Fatty ointments
5. Powder ointments
6. Ointments containing detoxifying chemicals

In addition to these, in recent years a number of silicone-containing ointments have been developed and widespread claims made of their effectiveness.

The answer to the question of what protective cream is best, is a difficult one; there is, as yet, no one universal repellent. One of the leading companies in this field offers nine or 10 different barrier creams, each with its own special indications, and it is necessary to match the cream with the specific hazards against which it must protect.

How can one be certain that the recommended cream is effective?

A study 10 years ago by the United States Public Health Service showed that of ointments claimed to be protective against water solutions only 42 per cent actually provided such protection. Some ointments, supposedly protective against aqueous solutions, were found superior only against oil solutions.[12]

The main difficulty in trying to choose the proper cream is that relatively few *well-controlled* laboratory and clinical studies have attempted to compare the various barrier creams available, and in the studies that have been made different types of evaluative procedures have produced somewhat different results.

For example, in a study recently reported from the University of Michigan, 20 substances (including several silicone and non-silicone protective ointments) were evaluated for their barrier action against: (1) soap and water, (2) soluble cutting oils, and (3) heavy cutting oils and a solvent.[13]

In this study, the back of the hand was used as the test object and a letter was drawn thereon with a pen. This was covered with approximately 0.5 gram of the ointment to be tested, thoroughly rubbed and then repeatedly washed for 30 seconds with the challenging solution to see whether the inked letter could be removed.

Silicone Ointments

It was concluded that the two ointments which contained large amounts of silicone gave the best results, and that the vehicle in which the silicone was incorporated influenced the efficiency of the tested ointments to a marked degree. The most effective protection appeared to have been provided by a mixture of 30 per cent silicone in petrolatum which afforded twice the protection furnished by petrolatum alone. A two per cent concentration of silicone, however, was no more effective than vanishing cream alone.

Under the stated experimental conditions, the non-silicone commercial ointments tested were found to have little value against either soap and water or soluble cutting oils, and *none of the protective ointments provided an adherent barrier against petroleum* solvents or insoluble cutting oils.

On the other hand, a recent study at the University of Cincinnati, testing silicone creams alone, and using different test procedures, reported that of the four silicone creams tested, the one containing 52.5 per cent silicone afforded the most protection.[14] They state that this preparation

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the LIGHTER SIDE
NATIONAL SAFETY COUNCIL
BLARNEY CASTLE
"HE SAID, 'HOLD MY FEET WHILE I KISS THE BLARNEY STONE... IT'LL BRING ME LUCK!'"
BUT YOU SAID, WEAR SNUG, COMFORTABLE CLOTHING THAT WON'T CATCH IN THE MACHINERY!"
WHAT'S WRONG NOW? AIN'T I WEARIN' A HARD HAT?

Analyze the Job for Effective Guarding

By ANDERS V. THOREN

Call in everybody concerned and study the operation. Then you're on the way to correcting a hazardous condition

MANY YEARS AGO I had to make a survey of an old plant. The superintendent guided me through and we finally came to the foundry where about 30 men were at work. It was hard to see what was going on for it was dark and a heavy smoke hung over the entire area.

I asked the superintendent if they did not have a fan or some form of ventilation. He answered, "Why, certainly!" Then he said to the foreman: "Hey, Charley, have a man start the fan!"

Charley issued the order and a worker started up a ladder towards a small cupola in the ceiling. The ladder was nothing but a set of cleats nailed to the upright, and I could see how every cleat moved as the man stepped on it. My heart sank as I watched, but eventually he reached the cupola.

Hanging on to a cleat, he grabbed a belt hanging on a line shaft and proceeded to hang it over the fan pulley. He got a stick kept on a beam for the purpose, and pushed the belt on to the line shaft pulley, starting the fan. Then he replaced the stick and climbed down and went back to his regular work.

I asked the superintendent if this operation was done regularly and he said the same thing had been done as long as he could remember. He added, as an afterthought, "Charley always picks a good man to put on the belt and we never had an accident."

It took quite a bit of selling to make the superintendent put in a proper ladder, a platform, and an electric motor that could be started from the floor.

In protecting the operator from the machine we have two factors —analysis and guarding. How can the factors be applied?

ANDERS V. THOREN is Assistant Supervising Engineer, The Travelers Insurance Company, New York. This article is adapted from an address at the 26th Annual Safety Convention, Greater New York Safety Council, April 17, 1956.

Consider these factors:

1. What is the function of the machine or what process is involved? Are we concerned about its mechanics or is the problem electrical or chemical?
2. Is only the point of operation involved?
3. How is the machine installed in relationship to other equipment?
4. Should the machine or process be guarded for protection of the operator, other employees, other machines?

After evaluating these points we generally come up with some ideas. Operating a dough mixer, for example, a man can get caught in either the agitator or in the gears. The guarding therefore should be such that the mixer cannot be operated with the cover open. Consequently the cover should be provided with an electrical interlock.

In addition, the starting switch should be conveniently located near the machine. The drive and gears should be suitably enclosed. If a tumbler is involved an enclosure must be provided around the tumbler and the interlock must be located on the gate of the enclosure instead of on the cover.

If an entire process is involved, we have other hazards. In a spray painting operation, for instance, in addition to mechanical guards, such as fan enclosures, we must consider the electrical installation, exhaust systems, and storage of volatile liquids—for here is an explosive atmosphere.

Selling the Guard

In guarding the point of operation, as on a press, the guard must give the desired protection to the operator without reducing the output of the machine and without creating other adverse conditions which may offset its effectiveness. The guard must be reasonable in price to manufacture and install. The owner sometimes must be sold on its benefits and the operator must be convinced that the guard is put on for his safety. Therefore, in addition to selling the guard itself, persuasion appeal and instruction must at times be included.

After guards have been installed, they must not be tampered with. Human behavior is sometimes strange. In a large refrigerator manufacturing plant there were several large blanking presses, each provided with a two-handed device consisting of two electric push buttons.

Each operator had been instructed to produce blanks for 50 minutes of every hour and then take a 10-minute rest period. The procedure was accepted, but to the surprise of the supervisors, employees not only stepped up production but had 15 to 20 minutes of leisure time out of every hour.

The superintendent made a careful check and found an ingenious way had been developed to cheat the two-handed device. A two-by-two had been made up, straddling the two push buttons, and on it had been nailed two small pieces of wood which lined up with the contacts. The two-by-two had been suspended at proper level and by pressing this rig up against the buttons the press kept in substantially constant operation, which explained the increase in production—naturally also the exposure.

I still remember the shakeup that took place and the brackets that were put in over the buttons to discourage further research work on the part of the operators.

In addition to point of operation guards, protection must also be afforded over main drives, for protection to the operator as well as others. In some cases adjustment points must also be guarded so that no adjustments can be made unless the machine is shut down. This is accomplished by installation of electric contacts or electronic devices.

Again, people must be taught and convinced of the importance of guarding as some are much adverse to changes and believe that a guard is a handicap. Only after they have been fully convinced do they accept the change.

For example, in a private power plant the dampers to five water tube boilers were manually operated and as the load changed and different burner tips had to be put into the burners, the firemen had to readjust the dampers to maintain proper combustion. They were usually slow in doing so with the result that the smoke inspector presented the owners with a summons for smoke nuisance.

As a result a recommendation was submitted to the owners to install an electric eye in the smoke uptake. The eye was installed and connected to an alarm which would issue the most excruciating sound as soon as anything looking like smoke went by the eye. The watch engineer naturally would rush out and go after the firemen to change the damper setting.

After some time the bell was not heard any more until one day it was found that, although the

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THE JOB AND THE GUARD

1. **Determine the process and the exposure offered by the machine.**
2. **Is the machine guarded or unguarded?**
3. **If guarded, is the guard effective? If not, what should be done? Would some other type of guard be effective?**
4. **Is the machine installed in the best location?**
5. **Can the machine be serviced and lubricated safely?**
6. **Does the machine offer hazards to other operators—other machines?**
7. **Should color contrast or special lighting be used?**
8. **How is raw material stored and fed? How is the finished product ejected and stored? How is scrap disposed of?**
9. **What clothing is worn by the operator? How is his stance and position while operating the machine? Is he subjected to unnecessary fatigue?**
10. **How are the surroundings—housekeeping, etc.?**
11. **Is the floor around the machine slip resistant? Resilient?**

Blueprint for a Dream Plant

THE QUESTION

If your company were building a new plant, what safety features would you like to see incorporated?

THE PARTICIPANTS

GLENN G. FLEMING, safety director, Celanese Corp. of America, Charlotte, N. C.

E. H. HOUCK, superintendent of safety and welfare, Jones & Laughlin Steel Corp., Aliquippa, Pa.

J. J. LAWLER, Division Safety engineer, Radio Tube Division, Sylvania Electric Products, Inc., Emporium, Pa.

HOWARD RIEFENSTAHL, safety director, Alpha Portland Cement Co., Easton, Pa.

FRANCIS H. WAGNER, director of safety, The Mead Corp., Chillicothe, Ohio.

SUMMARY

In asking the views of panel participants on this question, they were informed that "the sky was the limit" and their specifications needn't be limited by financial or other "practical" considerations.

One panel member asked to be excused on this topic since he and an operating executive didn't see eye to eye on some important points and any expression of opinion might open old sores.

Industries represented were textile, steel, electrical equipment, cement, and pulp and paper.

Fire protection, of course, ranked high among the essentials of a safe plant. Safe and efficient plant layout, materials-handling facilities, ventilation and parking space are perennial problems.

Facilities for safety and job training were also listed among the built-in safety features.

MR. FLEMING:

The best time for incorporating safety and fire protective features is at the time the plant is designed. It is much easier to include them in the specifications and drawings than to attempt to correct conditions after the plant is in production.

Fire protection features to be included are:

Fire-resistant construction.

Fire walls and doors.

Reliable and adequate water supplies.

Underground fire mains of adequate size and correctly located.

Automatic sprinklers.

Carbon dioxide, dry chemical or foam systems for exposed flammable liquids.

Provision for smoke removal.

Isolated storage for flammable liquids and hazardous chemicals.

Use of inert gas on storage and process vessels and equipment.

Provision for grounding and electrical interconnection of vessels, pipelines, machinery and equipment for handling flammable liquids, gases and dusts.

Electrical equipment and installations in hazardous areas in accordance with the National Electrical Code.

Positive ventilation for control of flammable vapors, gases and dusts.

Explosion venting.

Accident prevention features include:

Sufficient and properly located building exits.

Machinery and equipment well guarded and provided with interlocks.

Materials that resist corrosion.

Adequate work space.

Provision for safe maintenance of machinery and equipment.

Sufficient aisle space for operating powered materials-handling equipment.

Pressure vessels and piping fabricated according to ASME or API codes.

Provision of fresh air and removal of excess heat.

Pedestrian and vehicle traffic control within buildings and grounds.

Prevention of chance overpressuring of atmospheric pressure operating vessels.

MR. HOUCK:

Overhead cranes have been involved in many fatalities. In building a new plant, 15 to 18 in. clearance should be provided between end trucks and building columns. Several fatalities have occurred where an employee has been caught and crushed or rolled

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THE INDUSTRIAL SAFETY PANEL is an informal group of representative safety men. From time to time a few of the members are asked to answer questions relating to accident prevention.

Statements expressed here are primarily the views of the authors, based on experience. While in general they are in harmony with their companies' policies, they are not necessarily official statements.

The Panel is conducted by mail and participants have no opportunity to compare notes.

in this area, which in older plants is anywhere from 2 to 6 in.

Fixed operating cabs located at one end of the bridge are preferred safety-wise, rather than cabs which ride with the trolley, although operating problems may indicate the latter. Crane loads more often swing and strike the cab suspended from the trolley than with fixed cabs.

Access from floor to crane cab should be by stairways with handrailings, rather than fixed ladders and cages. If located on the outside of the building, the stairway should be covered by a canopy to avoid ice and snow on the steps in cold weather.

Substantial safety latches should be provided on all overhead crane burden blocks, particularly where the lifting device suspended from the hook is a spreader, pack lifter, or other object which has a fixed clevis and which can come off the hook should the craneman lower the block a few inches more than he intended.

Air-conditioned cabs should be considered for locations of extreme heat or where dust or fume conditions, although not toxic, may be extremely annoying and where satisfactory ventilation is not practical.

Piped lubricating systems to bridge bearings and to trolley bearings of cranes are highly desirable from a safety and maintenance standpoint.

There should be no head and body shear points between the moving crane cab and the top landing of stairway approaches to cranes.

Guarding should be given careful study on the drawing board as well as during construction. Guarding should not only comply with the state code having jurisdiction, but should go beyond the code if study or inspection reveals possible employee contact with moving parts that can be guarded.

Machine tools and like mechanical equipment should be designed to conceal moving parts within the machine and thus eliminate so far as is practical the necessity to mount guards on the outside of the equipment.

Electrical equipment should comply with the National Electric Code. All switches should be marked with the name of the equipment each switch controls and should be provided with means for locking them out.

Switch box covers of the type that cannot be opened unless the inside electrical contact is first disconnected are highly desirable.

Rubber floor mats under all electric panel boards are a must. A three-wire system for supplying power to all portable electric power tools, thus providing a third wire to ground when the tool is plugged in, will block off possible electric shocks from that source.

Roofs. A permanent means of access to each building roof should be provided, preferably stairs rather than ladders to provide easy and safe access for maintenance men and for quick access in case of fire. No glass should be incorporated in the roof, particularly manufacturing occupancy. Eventually, glass panes become loose, crack, and fall.

Roadways and Footpaths. Locations should be given careful study and planning at the drawing board stage and should be considered for present use and future expansion of the plant. Blind traffic corners should be avoided. Roads should be marked with route numbers and standard traffic signs, preferably reflectorized if the plant operates at night.

Footpaths or walkways should be provided separate from roadways used by vehicles. In-plant railroad crossings should be plainly marked and if vehicular and pedestrian traffic is heavy by automatic signal systems.

Fire Protection. The size of underground lines for fire protection should be designed for future expansion of the plant and should be separate from consumer water lines for production facilities, washroom and drinking water. Fire lines should be so located as to avoid relocation under future buildings and equipment. Fire lines should be provided in a loop system, with crosslines and dividing valves to isolate a leak for repair without shutting off the entire system.

An adequate number and type of portable fire extinguishers, fire hose and automatic fire protection systems, such as built-in carbon dioxide systems for special hazards like oil cellars, should be installed after careful study of the hazards.

Sanitation. Adequate facilities should be provided for washrooms, locker rooms and toilets. Toilet and shower rooms should have glazed tile walls. An individual locker for each employee should be provided. Lockers without legs and with sloping tops should be placed on a concrete pedestal running across the locker room except for aisle space. Fixed benches are desirable in front of rows of lockers.

Pebble rubber mats, which are easily cleaned, are desirable for shower room floors to prevent slips and falls. Water heaters of a proven safe type to avoid scalds should be considered, especially where high-pressure steam is reduced by regulators and is the source of heat.

Parking Lots. If the area surrounding the plant is not available for parking or if future expansion would likely eliminate such an area, adequate parking facilities for the intended working force should be provided, fenced off from the plant proper and illuminated for night operation. If the plant covers a large area, several parking lots should be considered to reduce pedestrian traffic through the plant.

This seems like a large order. However, experience in plants that were established years ago proves that it is less costly to build safety into a new plant than to make many necessary changes after the plant is in operation.

MR. LAWLER:

First, the accident prevention and plant protection department should be a part of the committee on building with authority assigned as to approval and rejection of plans.

Fundamentally, the basic design of any building which will be

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TESTING the air in a manhole with combustible gas detector and oxygen deficiency lamp. The area is fenced off with standards bearing red lamps and white tape.

Testing Air in Manholes

Underground work is safer today, thanks to modern detecting instruments and a system of inspection and maintenance

By ALBERT F. CASCIOLI

YEARS AGO when men wanted to test the atmosphere in a mine, they lowered a dog in a basket and waited for it to howl. Sometimes they carried birds or lighted candles. Today we are equipped with much safer, more expedient, and more available tools.

With workers entering more than 100,000 substructure surfaces each year, we are becoming fairly well acquainted with the atmospheric condition in these areas. Yet before a hazardous gas can be controlled or removed, it must be detected. Thus we have detecting instruments.

ALBERT F. CASCIOLI is an Engineer with Consolidated Edison Company of New York. This article has been adapted from an address before the 26th Annual Safety Convention, Greater New York Safety Council, New York, April 18, 1956.

We must first determine what we expect of such an instrument. Naturally, the type of detector to be used depends on the information required, and the broader its application, the more favorable its use will be.

A gas detecting instrument should tell us three things about an unknown atmosphere:

1. Whether it is safe for entry.
2. Whether it presents an explosive hazard.
3. The identity of the contaminant with a view to determining its source.

Before you can decide on the safety of entry, you must know if:

1. There is enough oxygen to sustain respiration.
2. Toxic gases are present in hazardous concentrations.
3. Combustible gas is present.

Normal air contains about 21 per cent oxygen by volume, yet man can get along fairly well in 17 per cent provided there are no toxic gases or vapors present. As the concentration of oxygen drops, work becomes more laborious and most men cannot work in air with less than 13 per cent oxygen.

Carbon dioxide is frequently found as a contaminant in atmospheres containing considerably less than 21 per cent oxygen. However, carbon dioxide itself is not classed as a poisonous gas; its asphyxiating effect is primarily associated with its substitution for oxygen.

In underground locations it is generally derived from the fermentation of organic substances. The detection method for CO_2 need only determine that enough oxygen is present. A simple test uses the fact that an oil flame is extinguished in an atmosphere of

approximately 16.5 per cent oxygen. This is the principle of the miner's safety lamp.

Toxic gases. Carbon monoxide formerly was our chief concern since it has no odor and is dangerous in low concentrations. With the advent of natural gas, this problem is gradually being minimized in so far as its presence in distribution gases is concerned. Nevertheless, detection should be made available for confined areas until such time as its presence will demand attention only in specific cases.

Carbon monoxide can easily be detected by papers or cotton waddings wetted with a dilute solution of palladium chloride sometimes mixed with acetone for freezing conditions. They are discolored black on presence of CO in concentrations as low as 0.05 per cent by volume.

Another excellent method is the use of impregnated gels, which change from yellow to various shades of greenish blue. Concentrations as low as 0.005 per cent can easily be detected.

Other gases which may be encountered from time to time include ammonia, hydrogen sulfide, gasoline and solvent vapors. Ammonia has a very pungent and irritating odor so that it would be avoided instinctively. Hydrogen sulfide has a distinctive odor similar to rotten eggs, which is immediately recognizable and alerts the individual. Hydrogen sulfide occurs in specific locations of bacteriological actions and any substructures in these areas can be pin pointed for future reference. Palladium chloride paper also darkens on exposure to hydrogen sulfide.

Gasoline and solvent vapors fall in a class of recognizable and characteristic odors of warning and may generally be associated with the presence of liquid. It is not intended to minimize the danger from these gases but their presence is of such a nature as to cause enough alarm to request attention, generally by the chemically trained personnel.

Explosive hazards. We must know whether combustible gases

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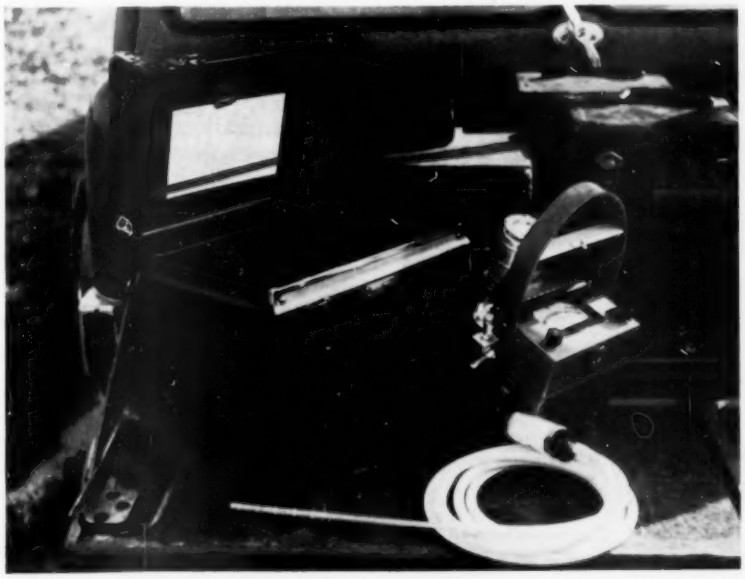
Gases	Lower Explosive Limit Per cent Gas in Air
Natural	5.0 - 5.3
Manufactured - 540 Btu/cu ft (Reformed - Jet - Cold Enriched)	6.2 - 6.5
High Btu Oil Gas 1000 - 1040 Btu/cu ft	5.5 - 5.7
Gasolines and Naphthas	1.1 - 1.5
Hydrogen	4.0
Hydrogen Sulfide	4.3
Alcohols - Iso-propyl	2.1

LOWER explosive limits of gases and vapors.

Gas	Maximum Allowable Concentration for Prolonged Exposure		Odor Characteristic	Minimum Concentration Detectable by Nose
	P.P.M.	Per cent by Volume		P.P.M.
Carbon Monoxide	100	0.01	None	
Hydrogen Sulfide	20	0.002	Rotten Eggs	0.3
Ammonia	100	0.01	Pungent	5.0
Gasolines	100	0.01	Sweet Hydrocarbon	60 - 200

CHARACTERISTICS of common explosive and toxic gases. The nose cannot detect carbon dioxide and loses its sensitiveness to other gases.



CLOSEUP of combustible gas detector and oxygen deficiency lamp with carrying case and hose for drawing air samples from manhole.

ANHYDROUS ALUMINUM CHLORIDE

Published by National Safety Council
425 North Michigan Avenue, Chicago 11

Properties

1. Anhydrous aluminum chloride ($AlCl_3$) is a very deliquescent, white to yellow or gray solid with an odor of hydrochloric acid. The solid sublimes at 177.8° C, forming hexagonal crystals.

2. Aqueous solutions are milky because of hydrolysis. If water is poured on the solid, violent reaction takes place with the liberation of dense white fumes, due to the formation of hydrogen chloride. Some of the physical properties of anhydrous aluminum chloride are:

Molecular weight	133.34
Density (solid)	2.44 gm/cc @ 25° C
Melting point	190° C @ 2.5 Atm.
Specific gravity (liquid)	1.31 @ 200° C & 752 mm Hg
Solubility	69.9 gm/100 ml H_2O @ 15° C; 100 gm/ml abs C_2H_5OH @ 12.5° C; s.s. C_6H_6; v.s.s. $CHCl_3$; v.s. CCl_4; v.s. $(C_2H_5)_2O$

3. Because anhydrous aluminum chloride sublimes at a relatively low temperature, this property is utilized to purify the commercial grade.

4. Anhydrous aluminum chloride is manufactured in large quantities by direct combination of finely divided aluminum and chlorine gas. Since the reaction is exothermic, water-cooled steel pressure vessels are used as reactors.

This Data Sheet is one of a series published by National Safety Council, reflecting experience from many sources. Not every acceptable procedure is necessarily included. Data Sheets should not be confused with American Standard Safety Codes, federal laws, insurance requirements, state laws, rules or regulations, or municipal ordinances.

5. Anhydrous aluminum chloride is also formed by the reaction of dry aluminum oxide and carbon, heated with chlorine in a furnace.

Uses

6. Anhydrous aluminum chloride has made possible such widely diversified compounds as aviation gasoline, vinyl plastics, Butyl and Buna S synthetic rubber, certain pharmaceuticals, antiseptics, and germicides, and synthetic, constant-viscosity lubricating oils used in transmissions, steering gears, and shock absorbers.

7. In the petroleum industry, anhydrous aluminum chloride has proven its extreme versatility not only as a catalyst for pyrolysis or cracking processes, but also for desulfurizing, deodorizing, decolorizing, and sweetening, and for the saturation of unsaturated distillates, thereby increasing their stability.

8. Anhydrous aluminum chloride is perhaps the most important inorganic chemical essential to the production of a wide variety of organic compounds and derivatives. It furnishes an infinite number of hydrocarbons and oxygenated compounds by a general synthetical method, the Friedel Crafts synthesis. As a catalyst in this reaction, it can be used to produce the following major groups of organic compounds:

- ketones
- acetals of formaldehyde
- aldehydes
- keto acids
- arylalkanols
- halogen compounds
- carboxylic acid derivatives
- primary and secondary amines
- phosphorus, sulfur, and arsenic compounds

9. The following special reactions that use anhydrous aluminum chloride as a catalyst are of industrial importance:

- addition
- reduction
- chlorination
- dehydration
- isomerization
- polymerization
- dehydrochlorination

10. In many instances, Friedel Crafts synthesis using anhydrous aluminum chloride for the above reactions has become the preferred industrial method because it produces high yields of the desired product.

11. A typical example occurs in the manufacture of anthraqui-

none, an important vat dye intermediate. Phthalic anhydride is heated with benzene in the presence of anhydrous aluminum chloride as a catalyst, to form an aluminum chloride complex of ortho-benzoyl benzoic acid. The latter is converted to anthraquinone by subsequent hydrolysis and dehydration reactions using sulfuric acid and oleum.

Containers

12. Anhydrous aluminum chloride is stored in airtight steel drums, which should have covers equipped with self-tapping vent screws. Containers must be dried before being filled. After the drums have been emptied, they should be washed out with water. The drums should be inverted over a wash rack lined with acid-resistant brick and equipped with a spray jet.

Shipping Regulations

13. Anhydrous aluminum chloride can be shipped in interstate commerce; there are no regulations restricting its shipment.

Storage

14. Anhydrous aluminum chloride should be stored in airtight containers in a dry place. When pressure build-up occurs, indicated by bulging of drum heads, the containers should be vented by removal of venting plugs in the top of the drums. So long as the product is kept free of moisture, it is stable. It should be kept clear of strongly alkaline materials, ammonia fumes, and similar substances.

Hazards

15. Under ordinary conditions, anhydrous aluminum chloride removes sufficient moisture from the air to cause hydrogen chloride mist. The resulting hydrochloric acid vapors are corrosive to the skin and mucous membranes. The vent screws should be removed cautiously from the drums, and chemical goggles should be worn during this venting operation.

16. Even the dry powder causes irritation of the respiratory tract and eyes. In certain cases, this material causes allergic symptoms; the dust adheres to the skin, causing primary irritations.

Personal Protective Equipment

17. To prevent skin contact and to afford respiratory and eye protection, personal protective equipment, as indicated below, should be worn by employees who handle anhydrous aluminum chloride.

a. Vapor-proof chemical goggles should be worn to prevent the dust from causing eye irritations.
b. Acid-proof masks or air line respirators should be used for extensive exposures.
c. Rubber or plastic gloves should be worn to protect the hands.
d. Employees transferring this material from one container to another should wear rubber aprons and rubber boots.
e. Normally, employees handling this product should wear acid-resistant clothing made of wool or suitable synthetics.
f. Frequent changes of clothing (at least once a day) are recommended for those working continuously with the product.
g. They should shower whenever they change clothing.

Ventilation

18. Anhydrous aluminum chloride is best handled and stored in well-ventilated areas. The principal producers use open-framed buildings for its manufacture. This type of architecture provides adequate ventilation. Even so, corrosion of the structural steel, piping, and other metal members of the building is a major problem.

Fire Hazards

19. If exposed to moisture, steel containers in which anhydrous aluminum chloride is stored corrode sufficiently on the inside to cause a fire hazard because of the possibility of entrapped hydrogen. Water poured on the dry powder will cause a violent reaction (similar to a minor explosion) with liberation of dense white mist.

Electrical Equipment

20. Corrosion-resistant electrical fixtures should be used in the areas where anhydrous aluminum chloride is manufactured, stored, or used. In the presence of moisture, dust which collects on conduit, switches, and other electrical equipment corrodes most common metals. As a result, an electrical fire hazard is introduced; it should not be overlooked. Corrosion of conduit can be greatly reduced by wrapping newly installed conduit with plastic tape and coating it with acid-resistant paint.

Symptoms of Poisoning

21. Respiratory difficulties developed from exposure to anhydrous aluminum chloride dust vary from mild irritation, coughing, and sneezing to choking and asphyxiation from the stifling fumes of HCl. A low pulse is a characteristic of poisoning from this acid salt.

First Aid

22. In general, contact of anhydrous aluminum chloride with skin, mucous membranes, or eyes causes burns. The toxicity of anhydrous aluminum chloride is caused by the release of hydrochloric acid upon contact with moisture. Inhalation of fumes is comparable in effect to inhalation of hydrogen chloride, with resulting respiratory irritation and, in severe exposure, edema of the lung.

23. Skin and mucous membranes contaminated with anhydrous aluminum chloride should be thoroughly flushed with running water for at least 15 minutes. No attempt should be made to neutralize with chemical agents. Clothing penetrated with the chemical should be removed immediately and laundered before re-use. A physician should see all cases other than minor burns.

24. Immediately after contact, eyes should be flushed thoroughly with water for at least 15 minutes. If a physician is not immediately available, they should be irrigated for an additional 15 minutes. A physician should be consulted, preferably an eye specialist. Oils and ointments should not be used in the eyes unless prescribed by a physician.

Toxicity

25. The hydrolysis of anhydrous aluminum chloride causes nausea,

vomiting, and purging if this acid salt is ingested in large quantities. In small quantities, it acts as an astringent, especially on the skin.

26. The toxicity of anhydrous aluminum chloride is caused by the hydrochloric acid. The acid neutralizes the alkalinity of the tissues and causes death as a result of edema or spasm of the larynx and inflammation of the upper respiratory system. Continual, prolonged exposure to low concentrations of the fumes results in tooth decay. Chronic acid burns of the skin result from continual contact.

Allowable Concentrations

27. Maximum allowable concentration of hydrochloric acid is 5 ppm for an eight-hour day. Concentrations of 0.13 per cent to 0.20 per cent hydrochloric acid are lethal to human beings in exposures of a few minutes.

Waste Disposal

28. Where anhydrous aluminum chloride is to be disposed of, the floor should be made of acid-resisting brick. The sewer system should be made of tile pipe. All joints should be sealed with acid-resisting cement or its equivalent. An ample supply of water should be available to wash the floor and flush the sewer.

29. Small quantities of the material can be washed away with large amounts of water. Larger quantities may be dumped in a barricaded area and allowed to weather away.

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ACKNOWLEDGMENT

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Litter Display Helps Plant Clean-up Program

CLEANLINESS is as essential to a plant as it is to a large city. Here's an idea from New York City's Sanitation Department that can be successfully translated into plant terms.

As part of the anti-litter drive, the city set up a giant litter basket in the middle of busy Times Square. Every day this oversized basket was filled with trash that missed the mark and landed on the square. Accompanying placards informed New Yorkers how bad their aim was.

A similar promotion in a plant is easy to organize and inexpensive in terms of results. In a heavy traffic area, set up an oversized basket patterned after an expanded metal refuse basket, the type that permits visibility. Fill it each night with the day's floor litter and leave it on display the following day. Signs encourage employees to keep the display basket empty. Company house organs can be employed in the "clean-up" program too.

If this promotion is to be successful, many strategically placed refuse containers should be located throughout the plant. (Photos by Wheeling Corrugating Co.).

A woman walked into her daughter's home and said hello to the parakeet, who responded with a wolf-whistle.

Pleased at this tribute, she continued to the back of the house and reported what had happened.

Her five-year-old grandson looked her over thoughtfully and then offered as helpful an explanation as he could muster. "That bird," he confided, "is confused."

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SIGHT SAVERS keep *silicone treated tissues* safety glasses clean and safe

A *wide awake* eye safety program requires *more* than safety glasses . . . it also calls for a *really convenient* way to *clean* them and thus assure their proper use. *That's the SIGHT SAVERS way* . . . most practical and efficient method ever developed to keep glasses sparkling clean. Chances are many of the people in your plant are already sold on SIGHT SAVERS . . . they're bought and used regularly by millions of glasses wearers.

SIGHT SAVERS contain enough of silicones to do their job quickly, conveniently, economically . . . no messy fluids. That's why they're ideal in plants . . . just snap the lever on a SIGHT SAVERS CLEANING STATION and it delivers one large 3 x 7" tissue . . . *ready-to-use.*

SIGHT SAVERS CLEANING STATIONS ARE FREE . . . a $2.50 value with your purchase of Sight Savers tissues. So, install plenty of them . . . at convenient points throughout your plant, offices and wash rooms. Available in safety green, black or white. They're compact, 3½ x 8" over-all . . . easy-to-install, adhesive or mechanical mounting . . . easy-to-maintain, simply insert SIGHT SAVERS Refill Packets, 800 tissues each, as needed.

Give the green light to greater eye safety. Put SIGHT SAVERS within easy reach of everyone in your plant. Install SIGHT SAVERS CLEANING STATIONS . . . distributed through leading Safety Supply Houses everywhere. In Canada, distributed by Safety Supply Manufacturing Company, Toronto.

FREE for your personal use—this handy SIGHT SAVERS DISPENSER-PAK containing 200 large Sight Savers tissues. Perfect for desk or glove compartment. No obligation. Write today for your FREE SIGHT SAVERS DISPENSER-PAK!

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CONGRESS QUOTES

Practical thoughts from sessions of the 44th National Safety Congress

Accidents or Injuries?

It's time to quit "ambulance chasing" in the accident prevention field. There has been an incorrect emphasis on injuries instead of accidents.

All accidents must be investigated for cause in order to eliminate them. Confusion in terms has been responsible for many people investigating only injuries while thinking they're investigating accidents. If we stop the accidents we will automatically eliminate the injuries.

—George W. Harper, associate professor of mechanical engineering, University of Illinois. (Pulp and Paper)

Punishment Overrated

You can lead a man to safety but you can't make him swallow it.

Strict enforcement of safety rules with disciplinary action where required was the method first used to minimize accidents when workers failed to lock out power circuits during cleaning operations.

This approach has now been supplemented by an educational effort. A demonstration panel is used to show employees the risks and results of failure to comply with safety instructions.

If our experience means anything, I think we may conclude that all of us are prone to overrate the significance of disciplinary action in preventing injury.

—Walter M. Pahner, general supervisor of safety, National Tube Div., U. S. Steel Corp. (Metals)

Training for Baby Sitters

Baby sitting seems to be rapidly approaching professional status.

A course in baby sitting is part of the Saskatchewan Department of Public Health program for home safety. The department's suggested course for baby-sitters has been used in widely separated places in the province. It is sponsored by a variety of organizations to qualify hundreds of girls for safe care of children.

One high school used the course for both boys and girls. In the city of Regina alone, 200 girls are on a waiting list for fall classes.

The department looks upon its course also as giving elementary training in child care to future parents.

—Mrs. Lynn Hamilton, Health Education Div., Saskatchewan Department of Public Health. (Home)

Automatic Result

A safety program needs not just "a boss" but "the boss."

Management backing of a program for truck fleet safety must be unqualified and complete. On the other hand, the safety department must accept responsibility for seeing that management has all the facts before it. This includes the economic factors of costs and production savings.

With a safety program on this basis, I am convinced that all those good things resulting from a safe operation such as better service, fewer injuries and more favorable public opinion will fall into line as an automatic result.

—M. R. Jensen, vice-president, Consolidated Freightways, Inc. (Commercial Vehicle)

Treat for Shock

A compound bone fracture isn't likely to kill a person but the shock might.

Traumatic shock is mainly the result of accidental injury such as severe burns, hemorrhage or fractures. It is a depressed state of all bodily functions due to failure of the circulatory system.

Treatment for shock should be given immediately following an accidental injury without waiting for symptoms to develop. It's easier to prevent shock than to treat it.

The degree of shock may be anything from a mild form lasting only a short time to severe forms which may result in death.

—Mrs. Frances Colwell, R. N., chief nurse, Eastern Airlines. (Occupational Health Nursing)

Dangerous to Children

Aspirin is the most common source of child poisoning in Chicago.

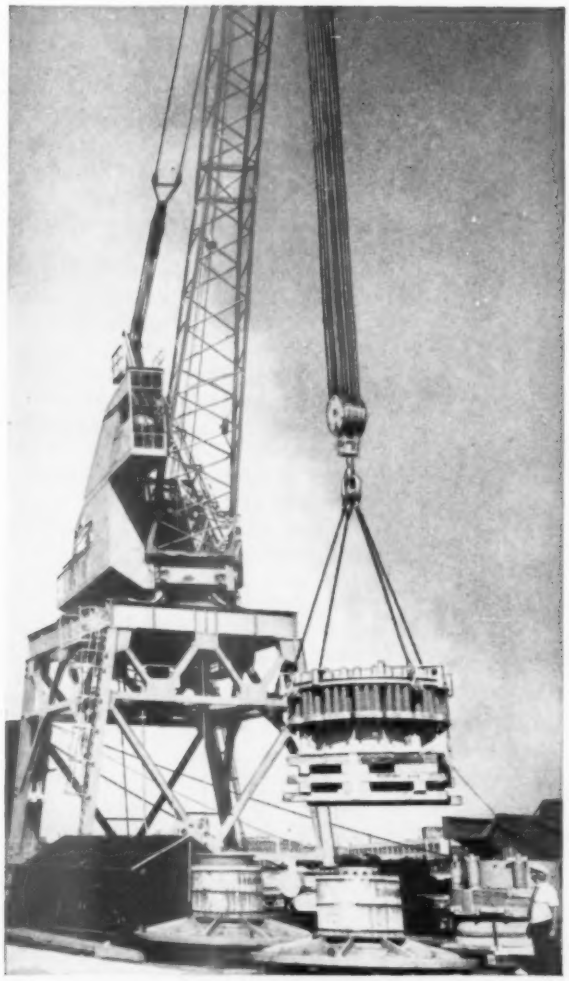
If information from other parts of the nation bears out the Chicago experience that 16 to 20 per cent of child poisoning is due to aspirin, the practice of flavoring aspirin and other medicines to taste like candy could be strongly criticized.

Such frequency of aspirin poisoning alone would justify setting up poison control centers in every city. Recommendations to parents, physicians and manufacturers could be established concerning the administration and storage in the home of drugs such as aspirin.

Aspirin is one of the drugs, both internal (pain killers, sedatives, laxatives and cough medicines) and external (chiefly liniments and antiseptics) which cause 50 per cent of Chicago child poisonings.

Cleaning, polishing and sanitizing agents are next with about 19 per cent. This group includes bleaches, disinfectants, furniture and floor polish, lye and cleaning compounds.

Pesticides rank next with about 10 per cent. Petroleum distillates,



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Your Macwhyte distributor will give you prices, literature, and catalogs, and can supply you promptly with standard or custom wire rope, cable assemblies, slings, aircraft cable, tie-rods, and swaged fittings.

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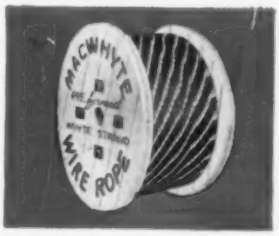
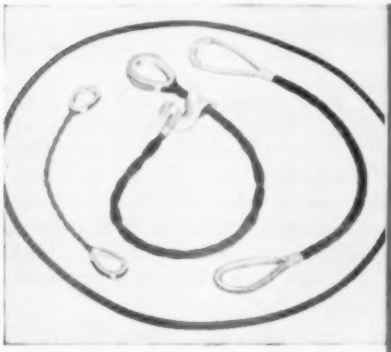


Distributors conveniently located throughout the United States.



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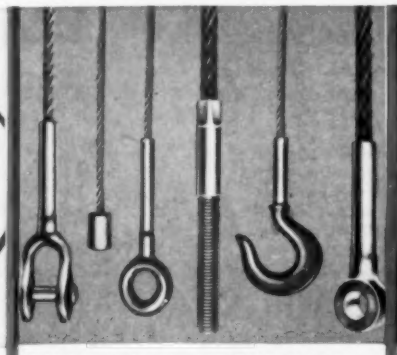

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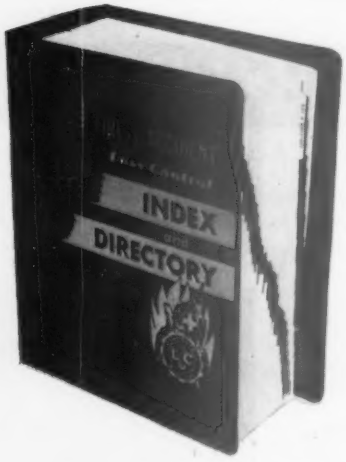

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principally fuel oil, kerosene and lighter fluid, account for 9 per cent. Turpentine, with 4 per cent, and cosmetics, 2 per cent, are the next most important causes.

Chicago's pioneering poison control center was followed by adoption of the plan in 14 cities within one year. Nine others are getting underway.

The problem of accidental poisoning is definitely a public health problem of such magnitude that the present system, which is a step in the right direction, provides inadequate facilities and service to vast areas. Without too much difficulty statewide programs could be set up utilizing the local medical health officer as the key figure.

Carelessness and lack of information on the part of parents, physicians and manufacturers of drugs and common household substances have produced the problem of accidental poisoning in childhood. It is imperative that each of us do everything possible to control this preventable problem by supplying a means of adequate emergency care and a well-planned educational program.

—*Dr. J. R. Christian, associate professor of pediatrics, Loyola's Stritch School of Medicine.* (*Home*)

Substitute for War Appeal Needed

It's too bad we can't keep some of the good parts of war.

During World War II, conservation of manpower was the dominating theme. Excellent results were obtained through the appeal to people's sense of doing their bit.

It is unfortunate that we neglected to substitute a theme after the war that would have kept this manpower conservation in effect. A conservation of manpower for peace theme that would have been effective in reducing the appalling loss we face today in manpower and dollars.

—*F. A. Mechling, executive vice-president, A. L. Mechling Barge Lines, Inc.* (*Marine*)

Professional Training

Establishment of college courses leading to professional degrees in safety engineering are needed for

FOR DAY-LONG FOOT COMFORT ... IT'S JOB-TESTED VUL-CORK

Shoes courtesy Iron Age

MR. HOSEA ROWELL, *employee of the Ford Motor Company, says,* "I've just bought another pair of shoes with Vul-Cork Micro-Cell Neoprene soles. I have learned from experience that no other sole can give me such all-day comfort and still stand up against greases and oils."

Mr. Rowell's Iron Age safety oxford uses Vul-Cork's Micro-Cell Neoprene sole, a sole designed specifically for use wherever there are greases, oils or chemicals underfoot. It combines resistance to oil with an extremely high degree of flexibility, without sacrifice of the safety factor.

A Ford employee for 31 years, Mr. Rowell is presently employed as a Quality Control Inspector at Ford's Cleveland Engine Plant #1.

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New X-weld Chain— New Master Link

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The Accoloy X-weld 125 chain is non-kinking. Each link has an oversize welded area with welds of full alloy strength. This means extra ruggedness and longer service life. The new Shaped Section Master Link weighs no more, but it withstands deformation under loads up to 18% greater than a conventional round section can.

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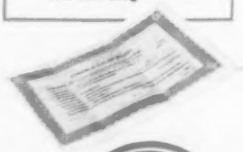

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progress in the field. Accident prevention would be more successful if it were recognized and practised as a profession.

The study of safety requires knowledge of human engineering, supervision, psychology and philosophy. An over-all knowledge of such fields as business administration, training methods, publicity, and public speaking is also necessary.

There is no course designed specifically for this field today. Educators and practising "accident preventionists" should get together and develop the necessary courses and subjects.

—*H. W. Heinrich, chairman, Uniform Boiler & Pressure Vessel Laws Society, Inc. (School and College)*

Remote Control

Where an organization is made up of units geographically spread out, a system of remote control is needed to make a safety program effective.

One of the important results of a standardized program is that employees everywhere are made to feel like part of the whole organization.

Many of the ideas which have been suggested today might be called "remote control." In a sense, it provides control over separated operations from a headquarters operation.

—*J. Lauren Shopen, safety director, Consumers Cooperative Assn. (Fertilizer)*

Vital Paper Work

Do you ever get annoyed because the nurse is busy filling out records while you're waiting to have your aches and pains treated?

Well, if it were not for record-keeping, nursing science wouldn't be where it is today.

A patient's hospital chart helps the doctor diagnose and prescribe treatment. Over a period of time, records like this helped in the evolution of precise knowledge of symptoms.

Radium poisoning came to light because of records kept on workers who painted radium dials on watches.

The world would probably be in the dark if it were not for rec-

ords. History, literature, music, medicine and nursing, if you like, might never have been.

—*Mrs. Ida C. Ayers, Industrial Relations Department, Collins & Aikman Corp. (Textile)*

Not a Jungle

Machines can't think, and they won't jump on you like a jungle beast.

Here are seven basic rules for machine tool safety:

1. Utilize mechanical safeguards.
2. Take care of hand tools.
3. Wear proper clothing.
4. Use personal protective equipment.
5. Maintain good housekeeping around machines.
6. Be aware of hazards.
7. Avoid horseplay.

A machine shop is not a jungle in which you endanger your life by merely entering and becoming exposed to massive metal animals. It is a place where accidents may occur if common sense, good judgment, training, and supervision are not exercised.

—*William A. Isaacson, safety supervisor, Chrysler Corp. (Auto and Machine Shop)*

A Sea-Going School

Sailors now attend a sea-going school to learn lifeboat handling.

The school is conducted aboard the *SS Lurline* during the ship's stay in Honolulu. Members of the crew and ship's officers spend several hours going through a practical demonstration in boat handling under the auspices of the U.S. Coast Guard.

During voyages, classes to prepare men for written examinations are conducted. Men successfully completing the course are awarded Coast Guard Lifeboat Certificates. This school materially increases the vessel's safety factor, since the number of lifeboatmen is generally double that required by law.

Since this program was first started in late 1954, more than 200 crewmen have received certificates as a result of their participation.

—*Harry E. Avery, safety engineer, Matson Navigation Co. (Marine)*

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dry chemical
EXTINGUISHERS
give you
finger-tip control
for FAST, FLAME-
SMOTHERING ACTION!
Buffalo Dry Chemical Extinguishers with instant, finger-tip control assure faster action against all flammable liquid and electrical fires! You get extra protection too, because a specially designed diffuser spreads a flat, dense blanket of flame-smothering chemical powder in a 60° arc that produces 1100 times its volume on contact with the flames . . . enveloping and extinguishing the flames in seconds! This heat-shielding blanket allows the operator to get closer to the flames for more effective extinguishing.
Lightweight, Stainless Steel Buffalo Dry Chemical Extinguishers are available in 10, 20 and 30 lb. cartridge operated models, and 5 lb. stored pressure model. They are Underwriters' Laboratories and Factory Mutual approved.
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better-built
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fire hazard . . . plus a complete
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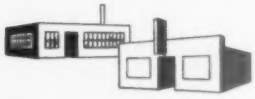
SMALL BUSINESS and ASSOCIATIONS



By A. M. Baltzer and Robert D. Currie
Small Business Program Staff, National Safety Council

The 1956 Association Award Story

Volumes and volumes! Statistics, promotional material, technical material, handbooks, manuals, minutes of meetings, surveys, bulletins, newsletters, newspaper clippings, photographs, posters, contests, speeches, summaries.

We were knee deep in the stuff! All this came from 21 association award entries—each doing an excellent job in helping their members prevent work accidents.

Award Judging

After the Small Business and Association's staff screened every piece of this material, it was given to the Committee of Judges to determine which associations merit the Award this year. The judges' decision to tighten up on old unchanged activities or previous Association Award winners gave associations with new programs a chance to compete with the veteran safety groups.

Award Presentation

This year 13 associations received the NSC Association Award. The presentation was made at the Association Award Luncheon during the National Safety Congress by David L. Arm, manager, Industrial Department, NSC.

Ivan LeGore presided at the session and Newell Johnson, general manager, National Association of Mutual Casualty Companies, and chairman of the Committee of Judges, spoke on behalf of the judges on the excellence of the work that the associations are doing in preventing accidents.

The luncheon program included the official premier showing of the Council's new film for small business, *Safety Doesn't Happen*, introduced by H. F. Reinhard, secretary, International Acetylene Association and member of our Small Business Committee.

Reaching Small Firms

Does associations safety activity prevent accidents in small firms? Perhaps not alone—but it surely helps. Let's have a look.

The associations which submitted entries represent more than 20,000 firms employing 2 million persons. Of these firms, 15,000 employ fewer than 100 persons. That's reaching small business!

The Association Award winners reported injury rate reductions which averaged 26 per cent for the past five years. That's preventing accidents in small business.

Thank You, Judges

The Council's Association Award Committee of Judges included:

Newell R. Johnson (chairman), National Association of Mutual Casualty Companies.

William B. Barton, Chamber of Commerce of the U. S.

Thomas M. Brennan, National Association of Manufacturers.

Reuel W. Elton, American Society of Association Executives.

Jay Judkins, U. S. Department of Commerce.

John Seeton, Pennsylvania Manufacturers' Association.

NATIONAL SAFETY COUNCIL
ASSOCIATION AWARD WINNERS — 1956

British Columbia Lumber Manufacturers Association
Can Manufacturers Institute, Inc.
Education Council of the Graphic Arts Industry, Inc.
Gypsum Association
Institute of Scrap Iron and Steel Inc.
Manufacturing Chemists' Association
Mississippi Manufacturers Association
National Tool & Die Manufacturers Association
Pennsylvania Manufacturers' Association
Portland Cement Association
Trumbull County Manufacturers Association
Western Oil & Gas Association
Wisconsin Canners Association

Here's your "Task Force" for any type of fire

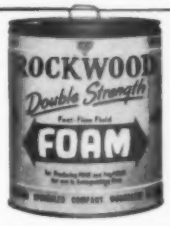
Complete team of Rockwood portable products combines speed, versatility and economy

Separately, each of these Rockwood products has its own particular advantages for fighting various types of fires. Together, they make a mobile, multi-purpose task force that delivers a whale of a lot of protection against *any* type of fire, whether it's Class A (wood, paper, rags, etc.), or Class B (flammable liquids). That includes personnel protection, too, because safety for the men who use them is an essential factor in all Rockwood fire fighting products.

Rockwood's long, practical experience and constant research bring you not only new *efficiency* but new *economy* in fire-fighting methods and equipment. It will pay you to learn more about these and many other Rockwood products. Mail the coupon today for complete information on Rockwood's specialized fire-fighting products.

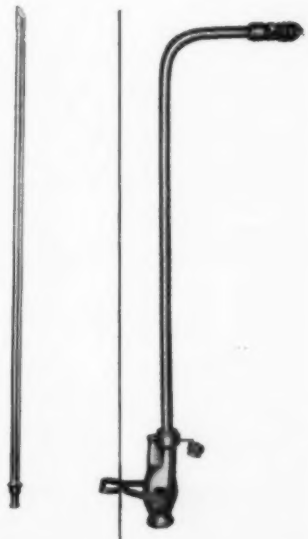
* **Type SG-60 Nozzle.** A true all-purpose nozzle that fights fire 5 ways. It discharges high velocity WaterFOG, low velocity WaterFOG (with applicator), FogFOAM, solid stream of water or solid stream of FOAM.

FOAM and "Wet" Eductor with the new FW Metering-Check Valve. Introduces Rockwood FOAM or "Wet" into hose lines, automatically proportioning correct amount of FOAM and "Wet" to water. Also usable wherever one liquid is fed into another on a fixed percentage basis.



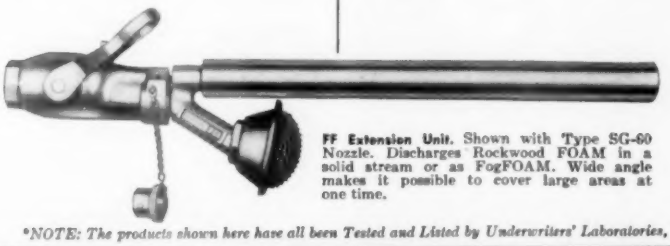
* **Rockwood Double Strength FOAM.** Puts out fires in flammable liquids, and in ordinary combustibles, quicker, at lower cost. Three parts FOAM and 97 parts water create a tremendous heat-resistant blanket. Flows freely at —15°F.

* **Rockwood WET.** One part WET mixed with 99 parts water increases water's penetration and extinguishing action. Gives quickest results against deep seated fires. Saves time, water, manpower.



Bayonet Piercing Applicator. Has a hardened steel cutting tool attached to tip, enabling operator to pierce through partitions, into interiors, etc. Discharges low velocity WaterFOG or FogFOAM.

* **Long Extension Applicator.** Discharges low velocity WaterFOG in an umbrella pattern, smothering fire without causing turbulence to flammables. Excellent personnel protection is another advantage.



FF Extension Unit. Shown with Type SG-60 Nozzle. Discharges Rockwood FOAM in a solid stream or as FogFOAM. Wide angle makes it possible to cover large areas at one time.

**NOTE: The products shown here have all been Tested and Listed by Underwriters' Laboratories, Inc.*

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Please send me your illustrated booklet on Rockwood fire-fighting products.

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Zone_____ State_____

AROUND THE COMPASS

ACTIVITIES • PROGRAMS • EVENTS

By George W. Harris

Field Service Department, NSC

Administrators Group Formed

Meeting in Providence, R. I., September 21, staff members from seven New England safety councils voted to form an organization to be known as the New England Safety Council Administrators. Charles Shields, executive director of the Rhode Island Council on Highway Safety, was appointed temporary chairman.

Primary objectives of the new organization are to develop close working relationships between local safety councils in the New England states, to exchange ideas, discuss problems of common interests, to provide technical assistance in the organization of citizen safety organizations, and to sponsor regional conferences for the volunteer leaders of local safety councils.

Membership in the new organization will be open to all staff members of New England safety councils affiliated with NSC. The group will hold quarterly meetings and will rotate meeting places among cities in which member councils are located.

Noise in Buildings

"Noise in Buildings" will be the theme of the third annual West Coast Noise Symposium to be held November 12 - 13 in Los Angeles.

General Chairman Paul S. Veneklasen, of the Western Electro-Accoustic Laboratories, has announced that the two-day program will include participants from all parts of the nation. Delegates are expected to attend from 11 western states.

Mr. Veneklasen announced the dates for the Symposium were chosen to coincide with the National Meeting of the Accoustical Society of America to be held in Los Angeles November 15-17.

The Symposium is being coordinated by the Greater Los Angeles Chapter, NSC.

Sioux City Scene of Industrial Safety Clinic

On September 27th, Sioux City, Iowa, held a Regional Industrial Safety Clinic, sponsored by the Sioux City Chamber of Commerce, the Sioux City Safety Council, the Industrial Safety Association of Iowa (Iowa Manufacturers Association) and the Adult Education Center of Sioux City Public Schools. Subjects covered were "Four Approaches to Accident Prevention," "Off - the - Job Safety," "Industrial Relations," and "Foreman's Safety Value."

Ohio State Conference

Cleveland acted as host again for the 18th Annual Ohio State Safety Conference and Exhibit which was held September 18-20.

Its sections covered all phases of public and occupational safety promotion. Small subject sessions dealt with particular occupations or situations, and as in former years, the exhibitors displayed the latest developments in safety devices and appliances.

Local Councils Aid Home Safety Inventory

To date 53 safety councils have accepted the request of the Home Safety Division, NSC, to serve as local inventory centers for home safety activities.

The inventory is a systematic collection of reports of home safety activities currently being conducted. It is an attempt to find out "who is doing what" to promote home safety. The 1956 data collected will be used as a basis for planning a more coordinated pro-

NOVEMBER 24 is the big day at Berkeley—the day of the California-Stanford game. Participating in the parade again this year will be the Eastbay Chapter, NSC, of Oakland. Shown is 1955's Green Cross float.

Iron Age and DUPONT Join Forces to Bring You

AN OUTSTANDING *NEW* SAFETY SHOE VALUE

No. 676
C—6-13 E—6-13
D—6-13 EEE—6-13

Here's a sturdy new Iron Age safety work shoe with a whole host of features.

The upper leather is treated with DuPont's revolutionary Quilon chrome complex. It resists moisture; drys out soft and flexible even after repeated wetting. The Quilon leather treatment also prevents shrinking, cracking and hardening on exposure to most strong acids and chemicals. It enables these safety shoes to hold their original shape longer. All this adds up to more comfort and greater wear.

The Iron Age "Storm Trooper" features a Bearfoot Neoprene Crepe Safetred sole and heel. There is no outside heel to catch and trip the wearer. This one-piece sole and heel construction distributes the weight more evenly and affords a solid arch support. Other custom features are Pacifate vamp lining, leather toe lining, Dacron stitching, a sweat-proof insole and rawhide laces.

Get full facts on Iron Age No. 676 now. It's in stock and ready for immediate shipment.

Iron Age DIVISION Iron Age **H. CHILDS & CO., INC.**
Pittsburgh 12, Pa.

Scott Air-Paks

Cut Repair and Maintenance Costs, Safely!

Right — Old Method. Blowing air into chemical storage tank for 24 hours before man can safely enter.

Below — No Waiting. No Down Time with Scott Air-Pak protection. Man enters and does the job immediately, safely.

SAVED 24 HOURS on every Tank Cleaning Job

• Many times an old established practice is accepted as "The way it has always been done". No attempt is made to change it. Blowing air into a chemical storage tank from 12 to 24 hours before permitting a man to enter to clean or paint it, is a typical example! It's a slow and costly method. How much simpler and lower in cost to equip a man with a Scott Air-Pak—open the tank and let him go to work Immediately — Safely and Quickly!

On Hazardous Jobs Scott Air-Paks Help Management and Labor Breathe Easier

Does tank cleaning and painting play a part in your process? Let us tell you more about the Scott Air-Pak Way.

Write for free booklet "Scott Air-Paks Save Money, Man Hours and Men for Industry!"

VISION UNLIMITED

New Scottoramic Face Mask now available for all Scott equipment, (standard on most models), and for replacement on your present breathing apparatus.

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SAFETY EQUIPMENT DIVISION

SCOTT AVIATION CORP.

211 ERIE STREET **LANCASTER, N. Y.**

Canada: Safety Supply Co., Toronto — Branches in principal cities
Export: Southern Oxygen Co., 15 West 57th Street, New York 19, N. Y.

gram of home safety education and training.

In Memoriam

Names of the first 500 persons who died in Wisconsin traffic accidents in 1956 were published recently in the *Milwaukee Sentinel.* The names and a brief boxed editorial spanned two full pages of the newspaper.

New Manual for Utah JP's

A comprehensive manual for justices of the peace has been prepared under the sponsorship of the University of Utah by Brigitte M. Bodenheimer, member of the Utah Bar.

This publication developed from traffic court conferences sponsored by the traffic courts committee of the Utah Safety Council. In the manual are found answers to the most common problems that confront justices of the peace in Utah. Language and style of the manual make it very easy to read and understand.

Approve Green Cross Emblem Restriction

Class "A" chapter managers have indicated they favor restricted use of the Green Cross Emblem. A ballot was mailed June 25, asking the managers to vote on the recommendation of the Traffic and Transportation Conference restricting use of the emblem as outlined by the National Safety Council Board of Directors. The intention is to insure that the Safe Driver Award of the National Safety Council would be the only safe driver award bearing this symbol.

Of the 66 ballots returned, 45 favored the recommendation; 21 were opposed.

The recommendation of the Traffic and Transportation Conference, along with the result of the ballot of local safety organizations, was scheduled for consideration at the October meeting of the National Safety Council Board of Directors.

Driver Improvement School

The Chicago Municipal Court's new Driver Improvement School for traffic law violators will open soon. A final "dry run" for the seven instructors to the school from the Traffic Division and Park

District was conducted August 14-16.

Violators who lack knowledge of traffic laws may be sent to the school by traffic court judges. They must complete the course and pass an examination.

A committee of four from the seventh district of the Illinois Federation of Women's Clubs attended the course and gave a final critique of the curriculum. The committee was selected from 25 women who assisted with earlier practice sessions. They were chosen from 400 members who volunteered to test the planned course during the group's convention April 18.

Radiation Detector Uses Transistors

LATEST WORD in radiation detection instruments is displayed here by Ray Massey, a General Electric radiation monitor at the Hanford atomic plant near Richland, Wash. At left is a new transistorized alpha radiation detection instrument developed at Hanford by G-E instrument engineers.

The new survey meter is smaller, lighter, more rugged and not as sensitive to temperature and humidity changes as the vacuum tube type instrument shown at right. Tests also have proved that instruments which contain these tiny transistors in place of large vacuum tubes have a battery life many times greater than the vacuum tube devices.

Driver, John J. Palazzola receiving his Hamilton from Robert W. Corcoran

. . . for 15 years

UNITED PARCEL SERVICE has awarded safe drivers a Hamilton

. . . America's Most Awarded Watch

UNITED PARCEL SERVICE is the largest and most famous in its field, operating in 15 major metropolitan centers. Included in its 10,000 employees are the safety-conscious deliverymen who drive the 6,000 delivery vehicles hundreds of thousands of miles to deliver millions of packages *safely* and *on time*. The U. P. S. safe driving record is one of the finest in the nation —and one in which Hamilton watches play an important part.

Robert W. Corcoran, Vice President, Manager of U. P. S.'s New York plant says: "Because we train our drivers to provide safe, dependable service in delivering the goods, we want them to be sure of dependable service from their 5-year Safe Driving Award watches. That's why we insist on Hamilton watches—we know they'll 'deliver' too."

Yes, U. P. S. is one of the hundreds of blue-ribbon American companies who know that HAMILTON, *the blue-ribbon American watch, is the employee award which "rewards" the employer most.*

Hamilton watches are awarded by more companies than all other makes combined. You can benefit from Hamilton's vast experience and cooperation. You'll find many helpful suggestions in the 28-page booklet entitled "How to Get the Most from an Employee Award Program." Just mail this coupon today on your company letterhead.

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☐ Please mail me a copy of your booklet, "How to Get the Most from an Employee Award Program."

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Today's safer

Leading shoe manufacturers are now to give you safety shoes that

"QUILON" combines with leather fibers to help shoes resist perspiration, acids, alkalies . . . protects against water, scuffing damage

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• Du Pont supplies "Quilon" only to tanners, does not make leather or shoes.

RECORD INDUSTRIAL CO.

LEHIGH SAFETY SHOE CO.

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H. CHILDS & CO., INC.

RECORD INDUSTRIAL CO.

LEHIGH SAFETY SHOE CO.

safety shoes

using leather processed with "QUILON"

protect against more hazards

You know what a few drops of powerful acids can do to leather—*burn right through it!* And you know how corrosive chemicals can damage new safety shoes in a short time. Here, from leading manufacturers and distributors, are safety shoes that have increased resistance to most acids . . . give you more all-around protection and service. These new, safer safety shoes are made of fine leathers that have been specially processed with Du Pont "Quilon" chrome complex. "Quilon" helps safety shoes resist damage from repeated wetting and drying, from scuffing and scarring, from perspiration and other harmful effects safety shoes must withstand. Yet, for wearers' comfort, the leather breathes! That's why you'll get more for your money when you specify safety shoes processed with Du Pont "Quilon". They're safer, more practical safety shoes.

E. I. DU PONT DE NEMOURS & CO. (INC.), GRASSELLI CHEMICALS DEPARTMENT, WILMINGTON 98, DELAWARE

QUILON®

Makes good leather perform better

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

SENTRY SHOE CO.

SENTRY SHOE CO.

LEHIGH SAFETY SHOE CO.

RECORD INDUSTRIAL CO.

LEHIGH SAFETY SHOE CO.

H. CHILDS & CO., INC.

FOR DISTINGUISHED SERVICE

Winners of National Safety Council Awards for outstanding records

THREE TYPES of awards are given by the National Safety Council to industrial units in recognition of outstanding performance in accident prevention:

1. THE AWARD OF HONOR is available to units whose records, though not perfect, meet rigorous standards of excellence. These standards take into account the previous experience of the unit as well as the experience of the industry in which it operates. A unit must qualify on both frequency rate and severity rate. The Award of Honor is available also to units which complete 3,000,000 man-hours without a disabling injury.

2. THE AWARD OF MERIT has similar, but less exacting requirements. Minimum number of injury-free man-hours needed to qualify is 1,000,000.

3. THE CERTIFICATE OF COMMENDATION is available only for injury-free records covering a period of one or more full calendar years and totaling 200,000 to 1,000,000 man-hours.

Details of eligibility requirements may be obtained by writing to the Statistics Division, National Safety Council.

AWARDS OF HONOR

Celanese Corp. of America, Newark Plant.
Crucible Steel Corp. of America, Midland, Pa., Works.
Ford Motor Co., Two awards: Buffalo Stamping Plant; Dearborn, Mich., Tool and Die Plant.
National Lead Co. of Ohio, North Burnaby, B. C., Canada.
Steams-Rogers Manufacturing Co., Denver, Colo.
Western Electric Co., Indianapolis, Ind., Works.

AWARDS OF MERIT

Allis-Chalmers Manufacturing Co., Pittsburgh, Pa., Works.
American Can Co., Central Div. Laboratory.
American Smelting & Refining Co., Perth Amboy, Plant.
Bryant Electric Co., Bridgeport, Conn.
Canal Zone Government, Two awards: Panama Canal Co.
Celanese Corp. of America, Four awards: Bridgewater Plant; Celriver Plant; Ocotlan Plant; Summit Laboratories.
Celotex Corp., Marrero, La., Plant.
Ford Motor Co., Four awards: Atlanta Assembly Plant; Dallas Assembly Plant; Long Beach Assembly Plant; Steering Gear and Machining Plant.
Formica Corp., Winton Place Plant.
Hughes Aircraft Co., Tuscon, Ariz.
Glenn L. Martin Co., Denver, Colo., Div., Training and Safety Section.
Northern States Power Co., St. Paul, Minn., Div.,
Pennsylvania Electric Co., Saxton Generating Station.
Joseph E. Seagram & Sons, Inc., Paul Jones & Co., Inc., Dundalk, Md.
Shell Oil Co. of Canada, Ltd., North Burnaby, B. C., Canada.
Superior Water, Light & Power Co., Superior, Wis.
Trackson Co., Milwaukee.
Union Carbide Nuclear Co., Oak Ridge Gaseous Diffusion Plant.
Western Electric Co., Point Breeze Works, Manufacturing Div.
Westinghouse Electric Corp., Two awards: Meter Division, Switchgear Div.

Urges Added Light For Older Workers

MANY PEOPLE require more lighting at age 20 than they did when they were 17, a General Electric official recently told members of the Illuminating Engineering Society at its 50th annual meeting in Boston.

Presenting a summary of studies on the illumination needs of workers in the older-age brackets, Dr. Sylvester Guth declared that, in terms of vision, there is no such thing as the average man.

"In our studies on illumination requirements," he said, "we have found, in fact, that most workers under any given lighting condition are different from most others. At age 45, many will require more light than they did when they were 20 or 30 to do the same job efficiently. Some people, of course, won't.

"But, since we are in agreement that we need as many workers in industry as we can get, it is essential that we supply at least that amount of light that is needed for the most demanding worker," he continued. "Working people can't perform efficiently unless they can see, and they can't see unless they are given enough light.

"Furthermore, they are not safe at their work unless they have enough light to meet their individual demands," Dr. Guth added, continuing:

"I have an awkward ungrammatical—but accurate—way of saying this: 'Workers can't be safe if they can't see the things they have to duck out of the way from.'"

Increasing lighting levels in industrial plants to a point that will satisfy the most demanding worker will not be a detriment to workers who require less light to do their jobs.

"Artificial lighting has never been able to approach the intensity of the sun on an average clear day," he explained, "but practically none of us complains about the amount of light that nature provides."

40 times faster on streptococcus pyogenes

10 times faster on tricophyton mentagrophytes

Laboratory tests prove
ISODINE ANTISEPTIC KILLS GERMS
up to
40 TIMES FASTER!

10 times faster on pseudomonas aeruginosa

New miracle antiseptic . . .
A DAVIS EXCLUSIVE
for D-CARTON FIRST AID!

Isodine®

ANTISEPTIC

(Polyvinylpyrrolidone-iodine complex)

PAINLESS, NON-STAINING
DETOXIFIED IODINE COMPLEX

TESTED AND PROVED IN A GREAT NEW YORK HOSPITAL!

Isodine Antiseptic demonstrated its amazing superiority as a germicide and bactericide in actual hospital use for 3 years on 3,971 cases.

Laboratory tests proved it up to 40 times faster and more effective on common infectious organisms. The new product is equivalent to 1% available iodine, and provides iodine in a form that is non-stinging, non-staining, detoxified and non-burning (even when bandaged). Yet, it has shown itself far superior in use to tincture of iodine or Lugol's solution and to several mercurials as a bactericide.

Isodine Antiseptic is available for D-Carton First Aid Kits in Swabs and Applicators with an anti-freeze additive. Also in one ounce bottles without anti-freeze.

Send for Bulletin No. 328

The Davis Emergency Equipment Company is the exclusive industrial distributor for Isodine Antiseptic.

SAFETY DAVIS DIVISION

DAVIS EMERGENCY EQUIPMENT CO., INC.
55 Halleck Street, Newark 4, N. J.

Awards for the Worthy

The National Safety Council accents the positive—recognizing what is being done. That's why it has 24 different types of awards, one for almost every safety activity

By FRED LUBET

A BASIC PRINCIPLE of NSC operation is to give full publicity and emphasis to the positive, the constructive side of the safety picture. Wherever we find it, we seek to recognize effort, good intentions, and progress in accident prevention. There is another side to the picture, a dark and seamy side . . . and it must be discussed. But we believe the safety movement is best served by pointing to what is being done, rather than continually emphasizing what is not being done.

This principle—of accentuating the positive—underlies NSC's award program, probably the most comprehensive in existence. There is an NSC award for practically every type of activity that contributes to accident prevention. All of them have one purpose: to stimulate interest in safety by giving the widest possible recognition for praiseworthy efforts by individuals and groups on behalf of accident prevention.

Here is a complete run-down on types of NSC awards. Where do you and your organization fit into the picture? The award program is to serve you—to recognize your efforts on behalf of safety. Write for information on participation in the plans which cover your activities.

Industrial Safety Records. The award plan to recognize good industrial safety records is open to all NSC members. It provides recognition for good safety performance, encourages programs for the reduction of work injuries.

FRED LUBET is Director, Membership Extension, National Safety Council.

Awards are given for perfect safety records (no disabling injuries) covering an entire calendar year, or periods less than a calendar year where certain totals of man-hours have been reached. Non-perfect records which meet certain high standards are also eligible for awards.

In order of importance the awards in this plan are: Award of Honor, Award of Merit, Certificate of Commendation, and President's Letter.

For brochure and information write to the Statistics Division.

Industrial Section Contests. Many of the Industrial Sections of the Council run safety contests in which the participants receive first, second, and third place awards on the basis of lowest employee injury (frequency) rate in a calendar year. The following sections have such contests:

Aeronautical Industries, Chemical, Commercial Vehicle, Fertilizer, Food, Glass and Ceramics, Hospital, Marine, Meat Packing, Metals, Petroleum, Printing and Publishing, Public Utilities, Pulp and Paper, Rubber, Tanning and Leather Products, Textile, Transit, and Wood Products.

These contests are open to all Council members whose operations fit the above categories. Entrance information is available from the Statistics Division.

Safe Driver Award Plan. Individual drivers employed by users of the Council's Complete Motor Transportation Service are eligible for the Safe Driver Award in recognition of 12 months driving without a preventable accident. Because of rigid control the NSC Safe Driver Award enjoys the greatest prestige of any award of the type and is recognized as the "Nation's Highest Award for Professional Safe Driving Performance."

For brochure and information write Membership Department.

National Fleet Safety Contest. A competition for vehicle fleets, whether truck, bus, taxi, or passenger car. More than 20 divisions in the contest assure that all entrants compete with fleets of similar size and type of operation. Awards are made to entrants in each division with lowest accident rate per 100,000 vehicle-miles.

Participation is open to Council members operating five or more motor vehicles. For information write to the Secretary, National Fleet Safety Contest Committee.

Marcus A. Dow Memorial Award. This award consists of a plaque and cash grant of $500 recognizing, rewarding, and fostering high standards of fleet safety engineering. It goes to the individual deemed to have contributed most to the profession of fleet safety engineering in the preceding year. It is sponsored by the Greyhound Corporation and administered by the National Safety Council.

National Traffic Safety Award Plan

This is a nation-wide program by which recognition is given to cities and states for achievements

—*To page 96*

Protect Your Capital Investment against Fire

. . . use spark-resistant Ampco Safety Tools in hazardous locations

Plants, equipment, and inventories cost a lot of money, but human life is priceless. With so much at stake, many companies rely on Ampco Safety Tools for protection and improved worker morale.

Ampco Safety Tools don't give off dangerous hot sparks. Yet, they are hard enough and strong enough to stand up under practical service conditions. Factory Mutual Laboratories and other safety authorities approve them for use wherever there are dangerous, inflammable liquids, explosive gases, dusts, or vapors.

An investment in Ampco Safety Tools pays big dividends in fire prevention. So protect your plant and your people — select the tools you need from more than 400 different items. Write for our new catalog ST-10.

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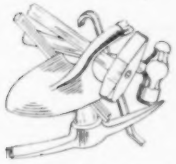
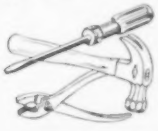
T-19

How to choose *Safety Tools*



For tools subject to impact and/or torque — specify Ampco Metal Tools.

For tools that have cutting edges or gripping teeth — specify Ampco Beryllium Copper Tools.



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INDUSTRIAL HEALTH

Abstracts of current literature
on Occupational Hygiene, Medicine, and Nursing

By F. A. Van Atta, *Director, Research Division, NSC*

Wisconsin's Approach To Hearing Loss

"Occupational Hearing Loss—Wisconsin's Approach to the Problem," by Meyer S. Fox. *Industrial Medicine and Surgery*, 25:310-316 (July 1956).

THE IDEA THAT LOSS of hearing can result from exposure to loud noise is at least a century old, but not much was really heard about it until a number of compensation cases appeared in the State of New York in 1947 and shortly thereafter began appearing in other states.

Although all of the states now have some form of workmen's compensation law, the provisions covering loss of hearing vary greatly and the interpretations vary even more. Most states afford compensation in some form or another for loss of hearing caused by a sudden traumatic incident, but the gradual loss of hearing from long continued exposure to noise which is excessive, but not sufficiently loud to cause a sudden incident, is much less definite.

Under the original Wisconsin Act total loss of hearing in one ear was compensated on the basis of 40 weeks total disability and 160 weeks for total loss in both ears. When the Occupational Disease Act became effective in Wisconsin deafness in one ear became five per cent of permanent total disability and in both ears one-third of permanent total disability.

Although loss of hearing from occupational disease was scheduled in Wisconsin in 1919, no claims were made until 1951 when approximately 50 claims were filed. It became apparent that there were a number of questions which it was not possible to answer in most instances and for which answers were necessary before reasonable decisions could be made.

After hearing a few cases the Industrial Commission decided to take careful testimony in one case, that of A. Wojcik vs. the Green Bay Drop Forge Company, and appeal it to the higher courts for review and opinion. In this instance a 60-year-old man was chosen. He was a forge worker with sufficient exposure to have developed a permanent loss of hearing. The Commission gave him an award of compensation which was reversed by the Circuit Court and then upheld in the Supreme Court of the State of Wisconsin.

While this clarified some of the points, the Advisory Committee on Workmen's Compensation legislation decided that the law was uncertain, difficult of enforcement, and productive of expensive litigation. It asked the legislature to put the hearing loss compensation law on the same basis as was already held for non-disabling silicosis.

This was done as an interim measure and two committees of the State Medical Society of Wisconsin and a second medical committee appointed by the Wisconsin Industrial Commission were set up to study hearing conservation and the second one to define the medical facts important for compensation.

Upon the recommendation of these committees, the legislature passed new amendments to the occupational disease laws setting up a schedule for compensation for either partial or total loss of hearing and defining the conditions under which claims may be filed and the conditions and operations required to determine loss of hearing for compensation purposes.

One of the important factors which has come out of the studies pertaining to this is the high percentage of applicants for employment who have an existing hearing loss. This has amounted to 27 per cent of applicants at Allis-Chalmers Manufacturing Company and 40 per cent of applicants at a drop forge plant.

Diagnostic X-Ray

"Radiation Protection in the Diagnostic X-Ray Department" by Norman Bolker. *The United States Armed Forces Medical Journal*, 7:1281-1288 (Sept. 1956).

THE NATIONAL COMMITTEE on Radiation Protection has designated 3/10r per week as the maximum permissable radiation dosage. This is not to be taken as indicating that a dose of 3/10r per week is harmless, since it does not take into account the risk of genetic damage. So far as is known genetic damage is directly proportional to the amount of exposure over the full reproductive life with no threshold.

The committee feels that mass radiation exposure is not yet sufficiently great to justify an attempt to calculate the genetic effect and to make allowance for it. The radiologist, however, should keep in mind the necessity for minimizing of radiation damage as well as protection of personnel and patients against the immediate direct damage produced by radiation.

This involves discretion on the part of the physician in ordering examinations of the lower abdomen and the pelvis and in particular in ordering x-ray examinations of infants which are almost always total body exposure.

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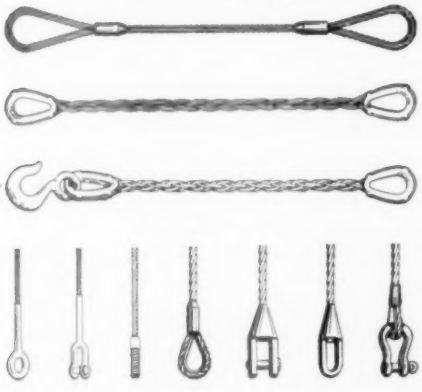

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protection of the patient and protection of the radiographic personnel, although protection of the patient will indirectly protect the radiographic personnel because of the reduction of exposure to secondary radiation scattered from the patient.

Protection of the patient in radiographic exposure amounts mostly to reducing the size of the radiation beam to the smallest compatible with the purpose of the examination, use of lead rubber drapes to outline the field, and use of the maximum practical tube-to-patient distance since the effective dose varies as the inverse square of the distance.

The fluoroscope is commonly a dangerous instrument because of the high currents and short distances which are ordinarily used to increase the brilliance of the image. Outputs of 100r per minute are not unusual in these units.

By using a field no greater than 10 x 10 cm. in area, a screen with a speed equal to that of the Patterson B2, and the tube-to-tabletop distance of no less than 45 cm. (18 in.) the total exposure can be kept to no more than 3 to 10 r. for most cases.

After a dark adaptation of 15 minutes it is possible to operate with 3 miliamperes or less and 80 to 90 kilovolts. Since the x-ray output is directly related to current, it is important to keep the lowest possible miliamperage. The tube should also be activated for the minimum possible time. With practice the actual exposure does not need to exceed about 2 minutes for an upper gastro-intestinal or barium enema examination and only very exceptional cases should take as long as 5 minutes.

Protection of personnel is somewhat more complicated because of the chronic nature of their exposure. Because of the inverse square relationship, the radiographic room should be of adequate size. A minimum of 12 x 12 ft. is recommended with the barrier at the control panel at least 6 ft. from the closest approach of the tube. The tube should be arranged so the primary beam cannot be turned toward the control panel. The walls and doors should contain at least the equivalent of 1 mm. lead and should have the openings protected.

The protection afforded by the tube casing and by the window in the control panel should be checked by survey meter or film badge rather than simply by assuming that they are properly protective. Personnel should also be trained and checked from time to time to see that they are properly protecting themselves and should be monitored with film badges or ionization dosimeters from time to time.

In fluoroscopy the radiologist and his aide should always wear leaded rubber apron and gloves and the aide should stand either behind the barrier or behind the radiologist when fluoroscopy is actually going on. When the table is in the horizontal position the protective curtain should be hung between the table and the radiologist and the tube should always be well centered behind the screen.

At the Air Force Hospital at Keesler Air Force Base a radiation survey showed that the radiologist received 6.0 mr. per hour during fluoroscopy and the technician received 2.0 mr. per hour behind the control barrier during radiography. With the photofluorographic unit the stray radiation behind the control barrier was 2

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mr. per hour but in the hallway adjacent it was 30 mr. per hour in front of the tube and 15 mr. per hour behind the tube.

At the 100 kilovolt 100 miliampere cystocopic outfit the stray radiation behind the control barrier was 5 mr. per hour but with the door open in the hallway it was 35 mr. per hour.

A Drink After Work

"Anti-skinning Compound Causes 'Reaction' If." *The American Pressman*, August 1956, p. 50.

THIS INVESTIGATION started with a complaint by 64 printing plant workers that they developed unpleasant reactions when they drank even a small amount of alcoholic beverages after working in the plant. It was noticeable that all of the individuals who complained worked in the second floor pressroom in a three-story plant and that the reaction was similar to that seen in people under treatment with Antabuse for chronic alcoholism.

Questioning of the men in this area indicated that the reactions had started about a year and 10 months before the complaint and the beginning of the investigation and also that the symptoms became more marked when the windows were closed and the pressrooms were heated in the fall and winter.

The second floor of the plant was a group of five rooms connected so as to be essentially one large room about 250 x 200 ft. There are a large number of presses both flat bed and rotary which contain a substantial number of neoprene rollers and which are washed on occasion with a mixture of acetone and a petroleum naphtha. The printed material is also sprinkled with a nonoffset powder consisting of a small amount of powdered sulphur and starch.

The management was certain that there had been no changes in the printing processes or supplies during the three years before the outbreak of these reactions except the addition of the antiskinning compound in increasing quantities.

It was quickly established that the reaction would occur very promptly in men who took a drink immediately after work. This reaction consisted of flushing of the face, red blotches on the skin which later ran together, redness of the whites of the eyes, drowsiness, shortness of breath and palpitation of the heart. There was no wheezing with the shortness of breath and the pulse increased in speed and in fullness but there was no change in blood pressure. It was also quickly established that the reaction would not appear if the men had been away from the plant for 20 hours before taking a drink of alcoholic material.

These signs in the exposed men normally occurred within a half hour after taking a drink and would disappear overnight with no observable residuals.

Experiments with all of the materials to which the individuals on the second floor were exposed in the course of their work, each taken one at a time and un-

—To page 160

NEW HOOD "Grip-all" GLOVE

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Front Back

R-58

Hood's new "Grip-all" glove is designed for workmen handling sharp, slippery objects such as plate glass, sheet metal, etc. It has an impregnated extra-coarse rubber dust surface that is super-resistant to slipping. It is also completely flexible — allows free finger movement, enabling workmen to grip hard and fast.

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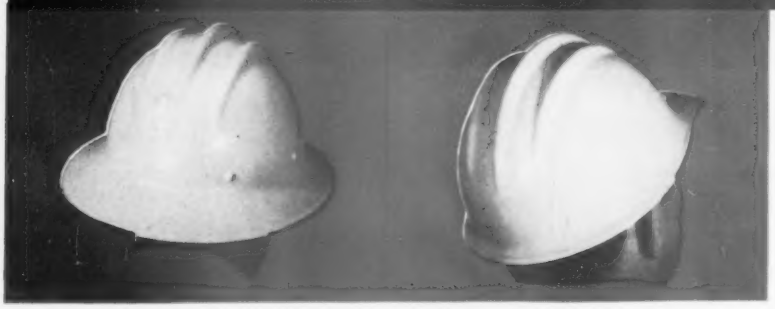

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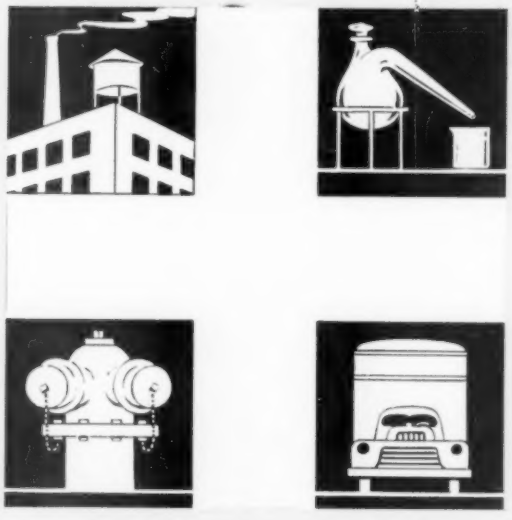
The Journal

OF THE AMERICAN SOCIETY OF SAFETY ENGINEERS



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NOVEMBER, 1956

AMERICAN SOCIETY OF SAFETY ENGINEERS

Organized 1911 — Chartered 1915

425 North Michigan Avenue, Chicago 11, Ill.

managing director, J. B. JOHNSON

editor, ROBERT E. BEIGHLEY

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WITH THIS fourth issue our Society's new Journal completes its first year of publication. The many compliments we have received during this initial year have been gratifying indeed. Also deeply appreciated have been the many fine articles we have received from members and others, some unsolicited and some in gracious response to our requests. It is our hope and determination to continue publication of the Journal with material of the same excellent quality we have been privileged to present in our first four issues. To accomplish this, however, will take more than our hope and determination. It also will require the cooperation of all chapters and members of the Society in keeping alert for article possibilities . . . in encouraging others to write and to submit their manuscripts to us . . . in authoring Journal articles based on their own valuable research and experience . . . in taking a personal interest in and assuming a personal responsibility for the maintenance of the Journal's high standards, volunteering their ideas and their services at every possible opportunity.—

—The Editor

Our President Speaks on SAFETY

I SAW a tree give up its life to save mine. It had been growing in the median strip of a modern divided highway.

The tree was uprooted by a passenger car that, out of control, swerved off the pavement and headed toward the oncoming lanes and a solid stream of Sunday afternoon traffic, including the car in which I was a passenger. The only thing between us and disaster was this lone shade tree, into which the car crashed, then veered and rolled over onto its top.

The tree, torn out by its roots, showered clods of earth over us. The car, inverted, its wheels still spinning in the air and its horn blowing continuously in a forlorn wail, was a wreck.

Lying inside on the car top was a girl. She was conscious and looked at me helplessly as I thrust back tree branches to get to her. She was in complete shock. When I assured her she was safe she closed her eyes and laid very still. In the group of onlookers which had collected, so quickly, was a registered nurse who took over the girl's care till an ambulance could arrive.

Brushing the dirt from my clothes, I got back into the car. The young family I was driving with had almost recovered from the shock of our near encounter. In a few minutes it was all over as far as we were concerned. Or was it really over for us?

Our car was plastered with earth from the life-saving tree roots. The one year old girl, sitting in the back seat with her mother, still had traces of dirt on her dress, though in blissful ignorance of her close call with death.

And the three year old boy, who had been sitting with his father and me in the front seat, was still bewildered. Many miles from the scene he kept repeating, "Why were the wheels still running, Daddy? Why did the car hit the tree?"

We couldn't explain to his satisfaction—or to our own. We knew only that we had just witnessed another Sunday afternoon highway tragedy and that, but for the tree that had given up its life to save us, we and perhaps others following closely behind us would have been added to the long list of highway casualties.

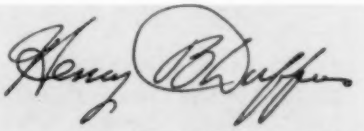
The tree, the clods of earth, the upturned car, the girl lying helpless inside—all these pictures already were fading into the past. But the little boy, even after I had told him a story in an effort to get his mind off the incident, kept repeating his question.

"Daddy, why did the car hit the tree?"

The answer to this far from childish question lies deep in the fields of human and engineering research. Its importance places a heavy responsibility upon us who have dedicated ourselves to the reduction of this needless waste of human lives in industry, on the highway, in the home.

As members of the American Society of Safety Engineers we must align ourselves with, and give moral and, if possible, financial support to the many research projects now underway to find causes and cures for the human and mechanical errors which result in such costly tragedy.

If we are to be true to the ideals of our Society, we must combine our efforts as safety engineers to bring about more effective control of needless highway accidents.



Henry B. Duffus, President
American Society of Safety Engineers

SOHIO Serious Injury INDEX

by A. R. Klingel and O. C. Haier

SEVERAL years ago it seemed to the management of the Manufacturing Department of the Standard Oil Company (Ohio) that the steady improvement in the disabling frequency rate had come to an end. A review of the statistics revealed that in 1953, for the first time in a number of years, there was an increase in the number of injuries. This was contrary to the experience of the refining industry. Figure 1 shows a comparison of disabling injury frequency rates of Sohio's five refineries with those of the refining industry as reported by the American Petroleum Institute.

What happened in 1953? What would happen in 1954? Would the rate go up again or would it resume its downward trend? These and similar questions suggested that the Operations Research group might help.

The statisticians, applying control chart techniques to the annual frequency rates for the period of 1949 to 1953, concluded that the small number of injuries involved did not lend themselves satisfactorily to short term predictability.

Frequency Rate Inadequate for Purpose

This was even more obvious when the records of individual plants were studied. Figure 2 shows a typical charting of the number of disabling injuries for six month periods in one refinery. It is obvious from the chart that the level of safety performance is at the point where long periods without any disabling injuries are probable at this plant. To use this chart to measure the effectiveness of the safety program in the succeeding six or twelve month period is not possible.

For example, assume that a perfect new approach to injury prevention is discovered and applied at this plant. During the next six month period, zero disabling injuries would be reported and plotted on Figure 2. A cursory examination of the past data or the application of probability theory indicates that even without this new approach, this result (zero injuries) could have been expected more often than not.

Need New Short Term Measurement

Thus, there would be little rational justification for claiming any accomplishment at all due to our hypothesized theoretically perfect program. As a matter of fact, at Sohio's present level of injury frequency, it would require a number of years before the improvement could be detected with reasonable certainty.

It became apparent to the statisticians that some measure other than disabling injuries would have to be used to measure safety program effectiveness, at least on a short term basis.

For a number of years many safety engineers have felt that the disabling injury frequency rate is inadequate to tell the entire story of safety program effectiveness. They know that many non-disabling cases have almost the same circumstances and factors as disabling cases. The main differences often are minute elements of time, space or location. Yet, these cases may never find their way into the traditional measure of safety program effectiveness—the disabling injury frequency rate.

With these thoughts in mind, Sohio's safety engineers developed what is now known as the Sohio Serious Injury Index. Disabling injuries, plus certain kinds of non-disabling ones which are considered serious or potentially serious, are included in the Index. Thus the Index includes the following types:

1. Non-disabling eye injuries from work-produced objects or corrosive liquids, requiring treatment

Arthur R. Klingel Jr. is supervisor, Research Section of the Operations Staff, Manufacturing Department, Standard Oil Company of Ohio. He has been with Sohio since 1942 when he was graduated from Case Institute with a degree in mechanical engineering. In 1947 he received an M.S. in M.E. from Case, has done additional study.

Otto C. Haier, manager of safety, has been with Sohio since 1947, previously had 11 years' safety experience with Carnegie Illinois Steel, holds a B.S. in M.E. from the University of Illinois. He is serving as general chairman of the Northern Ohio Chapter, American Society of Safety Engineers for the chapter's 1956-57 activity year.

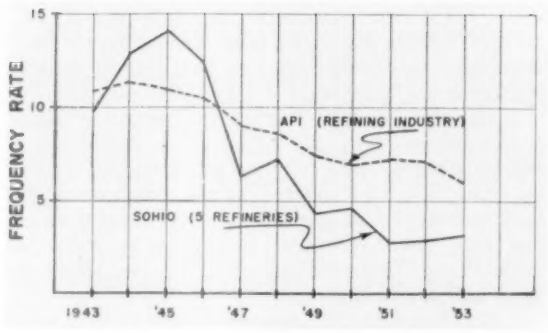


Figure 1
Disabling Injury Frequency Rates

by a physician. (Wind-blown objects are not included.)

2. Non-disabling fractures.
3. Non-disabling lacerations requiring suture.
4. Non-disabling injuries for which the attending physician prescribes work restrictions or motion limitations.
5. All disabling injuries.

It will be apparent to all safety engineers that this group includes most of the injuries generally considered serious. They were selected also because they fitted into a pattern of easily recognizable types, about which there could be no differences of opinion as to reportability.

For example, in the case of eye injuries our medical director's standing orders to plant nurses (each refinery has a nurse) states in part that if a foreign object in the eye cannot be removed with two or three passes of a sterile swab, the injured employe must be referred to an eye specialist. Thus if the nurses carry out their standing orders, all such cases will be reported.

Classification Problems Minor

There will be no particular questions about non-disabling fractures since these are usually determined by X-rays as ordered by the attending physician.

Since only our attending physicians suture lacerations, the only problem involved is that of a nurse deciding which cases should be referred to the physician. This is a very minor problem since there are frequent visits to the dispensary by the doctors.

Admittedly, there may be some discrepancies in determining that motion limitations or work restrictions are necessary. Doctors' attitudes and knowledge of the injured man's work vary, and influence their decisions. However, we have found that these injuries include many sprains, strains and back injuries, which are rather universally recognized as requiring such measures.

Disabling injuries are, of course, judged according to the nationally accepted American Standards Association's Standard Z16.1-1954, *American Standard Method of Recording and Measuring Work Injury Experience.*

The number of these injuries, expressed on a "per million employe-hour" basis, gives us our Index number.

Sohio's Research Operations group, working with the Safety group, came in with fresh ideas and techniques to help us interpret and evaluate our statistics in a scientific manner. The statisticians suggested that we apply "control chart" techniques and the concepts of random or chance variations to make the Index or frequency rate of serious injuries a more meaningful measure. The vast majority of control chart applications to date have been directed towards control and interpretations of machine performance. However, within the last few years numerous applications in the personnel fields have been made. [1,2,3,4,5]

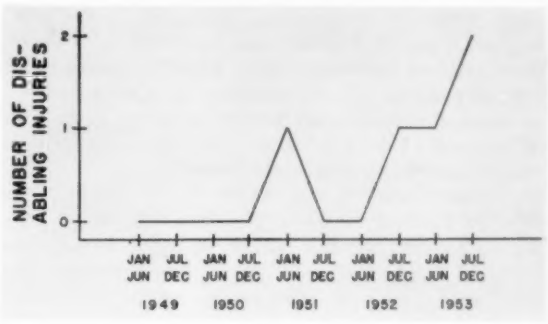
The control chart is based on the concept that any measure of performance will be subject to random or chance variation for which there will be no readily or easily discernible cause. When some specific influence, either very effective or very ineffective, is brought to bear on the problem, the variation will no longer be due to chance. The influence will show up as very low or very high levels of performance.

Chart Serious Injuries by Plant

In our case, the number of serious injuries per million employe-hours is plotted monthly on a control chart for each individual refinery. A mean or average monthly figure calculated from the previous three year period is shown as a solid horizontal line on the chart. Control limits also are calculated. These are shown on the chart as horizontal dotted or dashed lines above and below the mean. These control limits are the estimated amount of random variation which can be expected to occur without any *change in the kind or intensity of injury prevention activities.* They are based on the assumption that accident occurrences for a given level of accidents will be distributed according to a Poisson distribution pattern.[6] Although use of other distribution types, [7,8] might give improved estimates of control limits, analysis and experience with our own data indicate the Poisson to be adequate for our control chart purposes.

A typical control chart for one of the five refineries is shown in Figure 3. This shows the Index (frequency of serious injuries per million employe-hours worked) plotted monthly for 1954 and 1955, with the mean and the control limits in place. Note that for the first 11 months of 1954, the variations were not too far above or below the mean, and always within the upper and lower control limits. This indicates that the injury prevention techniques and activities in this plant were no more nor

Figure 2
Disabling Injuries in One Refinery



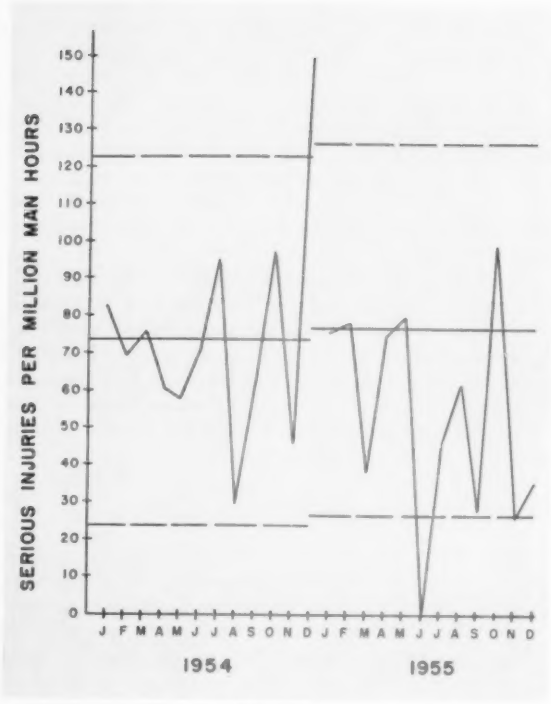


Figure 3
Serious Injury Index for One Refinery

no less effective than they had been for some time past.

In December, however, the Index jumped to an extremely high level, considerably above the upper control limit. This was an indication that something had gone wrong. With the control limits placed at ± two standard deviations from the mean, the odds were almost 40 to 1 that something significant had taken place to cause December's Index to be so high. It was now squarely up to the safety engineer to begin to dig, to discover the cause of that significant change and institute measures to eliminate or counterbalance the bad influence.

Index Points Out Immediate Trend

The monthly plotting for 1955 on Figure 3 shows how successful the countereffortsts were. Only three Index points—February, May and October—were above the mean, while June was zero, far below the lower limit. November was slightly below the lower limit. Here again, when June's performance was known, it was the safety engineer's job to discover what had been done during that month to influence serious injury frequency. This type of plotting, with the numbers of injuries involved, can show if something unusual is happening at the plant to change the injury rate and at the same time show the overall trend in serious injury frequency.

Contrast Figure 3 with Figure 4, which shows the monthly frequency rates of disabling injuries only for the same plant. One can readily see how inadequate the disabling injury frequency rate is for accurately measuring safety program effectiveness, except long range.

Conclusion

Sohio believes that in its Sohio Serious Injury Index it can tell rapidly when good or bad injury prevention techniques are being used.

A much greater number of injuries are being studied and therefore a better job of injury prevention can be done. Everyone knows the value of playing the spotlight on a larger area of activity. By the same token, when large numbers of all kinds of injuries, rather than just one or two disabling injuries, are exposed to public view, techniques are sharpened or new ones are sought and applied to show improvement.

Sohio Manufacturing Department management representatives at all levels have wholeheartedly accepted the use of the Sohio Serious Injury Index and are enthusiastic about its value. With the disabling injury frequency rate for the Manufacturing Department dropping from 3.25 in 1953 (see Figure 1) to 1.26 in 1954 and 1.55 in 1955 and, with the number of serious injuries on the decrease also, there is confidence that the prevention of injuries is being accomplished.

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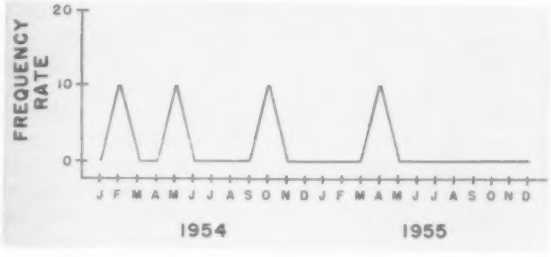
Figure 4
Disabling Injury Frequency Rate for One Refinery



PRINCIPLES OF ACCIDENT PREVENTION AND CONTROLS

by George F. Nuernberger

Industrial safety programs, to be effective, need the interest and active leadership of top management in all phases of planning and administration.

IT CAN BE assumed, and it is hoped "safely," that readers of this magazine for safety engineers have all accepted the fundamental fact that accidents are not inevitable or unavoidable. They are the result of human errors or defective material and equipment. They are wrong in principle because they cause pain, suffering and economic loss.

In our form of society where great emphasis is placed on leadership, we must necessarily expect the leaders of industry to be the planners for accident prevention. Planning for accident prevention requires evaluation of needs, establishment of objectives, assignment of responsibilities and authority to acquire the materials needed, just as planning for production of a marketable product requires coordination of men, money, materials and machines.

The leaders of industry must select men qualified in the field of accident prevention to assist them in the understanding of their responsibility. Their responsibility, however, does not end at the planning stage. It must be constant, giving emphasis to the responsibility placed on the supervisor and the employe.

As an example of effective planning, I would like to cite a policy originated by a management team that was clarifying all the company's personnel policies in a written form. This company safety policy stated objectives that are both specific and broad enough to give direction at all levels within the organization.

Policy

It is the policy of the company to provide safe working conditions and practices by utilizing the best available safety engineering, equipment and methods, and by requiring employe cooperation and participation in the safety program.

Safety Engineer

To assist the supervisory organization in maintaining the company policy, a safety engineer is retained in a staff capacity. The safety engineer is responsible for:

1. Appraising the effectiveness of existing safety programs, procedures and facilities, and making recommendations to responsible supervisors.
2. Providing technical assistance and advice on safety matters to the entire organization.
3. Counseling with supervisors on safety problems.

Supervisor Plays Key Role

In this accident prevention program the supervisor carries the key role. The broad policy gives him direction as to how his aims will be supported by upper management and also outlines his specific responsibilities.

George F. Nuernberger is safety engineer for the A. B. Dick Company, Chicago. Graduated from Marquette University in civil engineering in 1937, he has spent most of his professional life in accident prevention work. Since 1954 he has served as national treasurer and Finance Committee chairman for the American Society of Safety Engineers.

During development tool design is reviewed for production and operator safety factors.

Accident Prevention Principles *Continued*

Supervisors

The company depends on supervision for the successful administration of the safety program. Supervisors are responsible for:

1. Maintaining safe working conditions and practices in operations under their supervision.
2. Observing and training subordinates in safe work practices.
3. Bringing to the attention of other supervisors concerned any unsafe work conditions or practices which involve employes not reporting to them.
4. Seeking the advice of the safety engineer in the solution of specific safety problems, and evaluating the effectiveness of the safety program in their departments.
5. Investigating, reporting and analyzing conditions which led to recent accidents and taking steps to prevent the recurrence of similar accidents.
6. Obtaining medical attention for any ill or injured personnel.
7. Determining the need for, obtaining and administering the proper use of personal employe protective equipment.
8. Maintaining clean and orderly conditions in areas under their jurisdiction and avoiding the accumulation of unnecessary materials.
9. Overseeing the safety of their subordinates in the event of fire, at which time they will supervise the evacuation of their employes from any immediate danger area. When a plant-wide evacuation is signaled, the supervisors are responsible for evacuating their personnel according to plan.

Need Employe Participation

The policy also recognizes the importance of employe participation in the success of the program. To formalize this participation, it outlines the specific employe responsibilities.

Employes

No safety program can be successful without the conscientious cooperation of all employes. It is therefore required that employes:

1. Observe all safety regulations in the performance of their jobs.
2. Notify their supervisor immediately whenever they feel their job is unsafe.
3. Avoid the wearing of personal clothing and jewelry which may be unsafe in the performance of their job.

The drafting board is where safety begins, as part of designer's concept of the tool.

4. Use protective equipment and clothing prescribed for their job. Employes are responsible for personal protective equipment issued to them.

Further, the policy meets management's requirements for continuing interest in the program. This is accomplished by reporting full details of each and every failure in the successful administration of the policy. This is in addition to the responsibility placed on the safety engineer to issue periodic reports to all levels of management and employes.

Every industrial accident prevention program utilizes three areas or methods of control, formally or informally. These are tried and proven but, for the program to be successful over a long period of time, they must be used in the proper proportions to fit the conditions. As conditions and situations change, controls must be adjusted and emphasis shifted to produce the desired results.

It should be emphasized that the three areas of control to be considered here are not the only ones but it is in these areas we have the most knowledge. Daily research is progressing throughout the country and important information in other areas is being fitted together. The result will be that the job of accident prevention will become still more effective.

The three methods of accident control we know the most about are (1) engineering control, (2) work procedures or work methods control and (3) personnel control.

Engineering Control

Engineering control must set standards of facilities that provide for adequate layout, standards of equipment design that minimize hazardous situations, standards of process that control potentially hazardous conditions when the human element is introduced and standards of materials that outline the basic measures if the material is of a hazardous nature. Standards of preventive maintenance, a phase of engineering control, are essential to assure the reliability of the devices restraining the hazardous condition.

Engineering control is established by analysis of hazardous conditions. We must apply four steps:

1—Control by removal of the hazard.

2—Control by minimizing the hazard.

3—Control by guarding against the hazard.

4—Control by utilizing safety devices.

Great strides in the area of engineering control have been effected over the years in modern layout, automatic machines, production lines, etc. We can expect even greater advances in the future. It is inevitable because we are constantly demanding greater and greater efficiency of the industrial process. Industrial accidents reduce that efficiency. Therefore, the professional safety engineer and all the other members of the industrial management team are working toward the same goal—reducing accidents to nil.

Work Procedures Control

Accident control can also be established by work procedures or methods control. In this area, the analysis of work procedures on all jobs—the more hazardous as well as the less hazardous—must be considered so that ultimately all jobs are reviewed from the standpoint of how they can result in an accident and what methods or safe procedures must be used to make sure the accident-producing situation does not develop. Methods control also includes the use of injury preventers such as personal protective equipment.

After these steps have been taken, control still is not established until workers are trained in safe procedures. It must be recognized that in addition to the initial training, follow-up and retraining are parts of the program.

Personnel Control

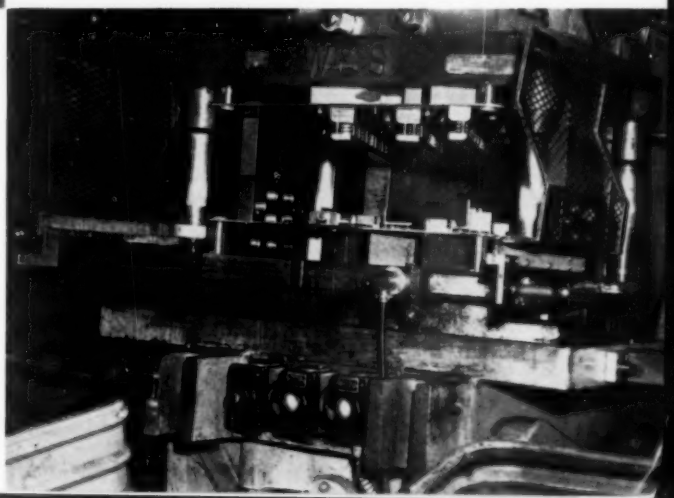
The third area of accident control is personnel control. This requires the establishment of personnel and medical standards. Past job history is an important source of information on the man's stability. These standards involve physical testing of people through medical examination and checks of skills, dexterity, vision, muscular coordination and other physical factors that have an influence on the hazards of the job that is to be performed.

We might also include psychological testing to determine whether or not the individual has the proper mental attitude for the group with which he is to work. If the job is the pressure type, we might test his ability to cope with its demands. Certainly it should be made clear that psychological factors are important only in those areas where there is a proven relationship.

By no means least is the important factor of mental ability. Here again, however, the findings of evaluation depend a great deal on the type of mental ability needed.

Along with the establishment of physical and medical

As tool is being built toolmakers, designers discuss production and safety features.



Completed tool in operation (right) shows safety features built in to remove hazard when operator puts hands into "danger zone" of punch press die. Design of tool incorporates interlock gates which, when opened, disconnect control circuit of press, automatically swing die blocks into position, prevent any possible injury to operator.

standards, information must be obtained on the relationship of job requirements to these personal characteristics. An important aspect of personnel control is the matching of physical characteristics, skills, mental ability and psychological demands of the job to the worker.

One very important way that personnel control can further accident prevention work is through group motivation. Safety demands the use of publicity, contests, posters, attitude surveys and communications of all forms. This is well covered in the literature and should be integrated in the program.

The last aspect of personnel control is counseling. This is a new field in many industries but is rapidly taking on greater importance. Many accident prevention men look on counseling with a certain skepticism. They are like the farmer who was approached by a salesman with a set of books on how to farm. The farmer's comment was, "What do I want with those books? I've been on this farm for 25 years, and I'm not farming as good as I know how yet."

This field of personnel counseling bears watching because it is here that tendencies toward accident proneness can be and are uncovered. Then patterns can be developed to bring them under control.

These three simplified methods of accident control, (1) engineering, (2) work procedures and (3) personnel control, are all present in varying degrees in every successful accident prevention program. The characteristics of the business, the structure of management and the type of employes all influence which phase requires the most emphasis. Certainly the individual directing the program will have special techniques. When a program lacks that certain spark, it may be in one of these areas that we can find the clue to revitalize it.

Application of Controls

So much for the controls themselves. How can they be applied? Establishment of this program of control will vary in nearly every company. It will, however, generally follow this pattern:

First, the hazards must be evaluated by gathering and analyzing the facts about exposure. Facts are obtained from accident records and from inspections made by the safety engineer or perhaps, in the case of some special problem, by an outside agency.

Facts on occupational health hazards can be gathered through the use of instruments operated by qualified persons within or outside the company. After the facts have been obtained, we must analyze the type of exposure, its frequency and severity. With this information the problem is fairly well outlined and the personal experiences of the safety engineer and others in the field will provide direction to the type of corrective action that should be promoted.

After evaluation of the hazards, the program of control is ready for activation. In the area of engineering control it must be recognized that already there are methods set up to meet standards for quantity and quality of production. Why not make sure those methods include accident prevention engineering control when they are being developed?

One way could be to have the same group that develops quality and quantity standards also develop safety standards to be engineered into a process. A safety specialist's advice will be needed the first time this is done. However, if the safety specialist has evaluated the hazards in terms the engineer can use and understand, the engineer will soon learn to recognize the close relationship between his engineering methods and injuries to the working force. Then he will develop the most accident free processes.

In addition to engineering, there is another important group closely associated with the work procedures or methods area of accident control. These are the industrial engineers, time study or work standards people. Though primarily concerned with doing the job in the simplest manner and establishing a rate for it, the work standards man must understand hazards and how they result in accidents.

It is an accepted part of his job that he specify in detail the elements for doing the work. He must have thorough knowledge of accident-producing situations so that he allows sufficient time for safe operation and does not introduce short cuts that have the potential of causing unwarranted hazards. The time study or work standards man must be informed constantly by the supervisor of any element change in the job so that the time allowance can be adjusted.

An important contribution to safety is the ability of an industrial engineer to recognize phases of an operation in which time increases, though they make immediate costs higher, will ultimately save both time and money by increasing safety. He will also be on the alert for awkward setups, tooling, material arrangements, etc.

It is fundamental to train supervisors so that they, in turn, know how to train properly the individual in his job operation. The technique of supervisory training is well covered in the literature and a sound program that fits the needs must be used.

The right way to do the job is the safe way. Assuming that we are doing the best job possible in developing standards and that those standards are being implemented by the best engineering methods, it then is essential to make sure the supervisor or trainer knows the job elements. He must also know how to recognize and evaluate hazards so that he can train workers to avoid them. He will recognize certain hazards that even well trained workers cannot avoid. He has the responsibility to call such conditions to the attention of those who can correct them.

Conclusion

There are many experts in each of these areas of accident control in an industrial organization. It is necessary to have management understand that accidents are a by-product of production; that they are not inevitable or unavoidable. Accident prevention is management's responsibility first, supervision's second, and the employe's third, and is an integral part of the production process.

Effective accident control is a matter of management concern. It is so closely tied in with all aspects of production and has such a bearing on good employe and public relations that it is one of the major factors in profitably and successfully operating a company.

"MACHINE GUARDING"

by Walter E. Montgomery

Ancient principles of safety, known by the Babylonians in 2000 B.C., are valid today: Provide the best possible guard and give the worker constant safety education and training.

Walter E. Montgomery is safety director, Kenneth B. S. Robertson Ltd., Montreal, where he has been a safety consultant for 23 years. He has held many chapter and national offices in the American Society of Safety Engineers, has served as a director of the National Safety Council, is consultant to the Canadian military.

TODAY'S accident experience, if compared with that of 50 years ago, would show relatively few disabling injuries attributed to inadequate machine guarding.

Yet even a superficial examination of current reports will show that many accidents—far too many—still occur at machines; that these accidents contribute substantially to the frequency and severity rates which industry is working constantly to reduce.

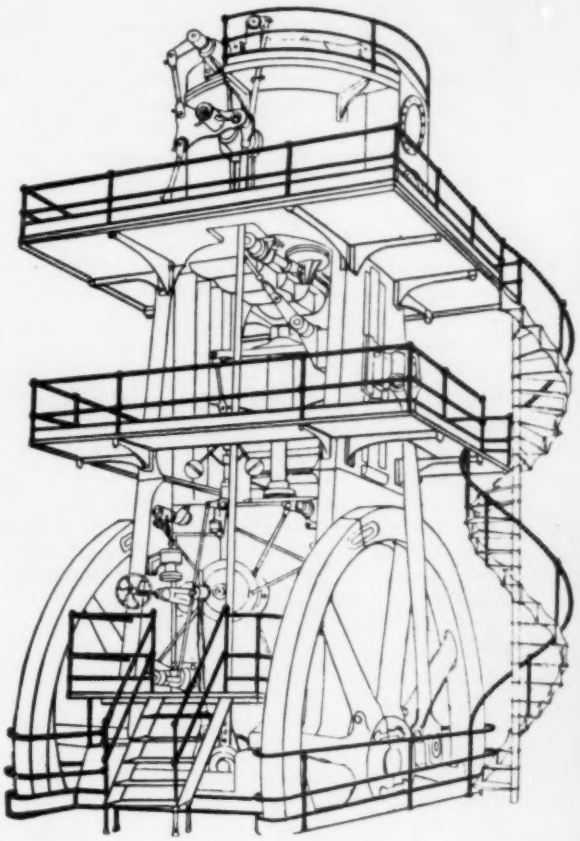
Of these accidents which occur at machines, some few happen under conditions where no physical guards have been provided. In other cases, no guard has been developed which will completely eliminate the hazard involved in operation of the machine. And many times accidents occur because the guard provided was not being used or the safety procedures established were not being followed by the operator.

Even though industry has progressed far in the field of accident prevention, there still is a large area which can be improved only through diligent application of the basic principles of machine guarding. Therefore, even though these principles are merely ideas about safety that have their roots in ancient times, it would seem that conditions call for their constant repetition and reexamination to inspire their use with renewed vigor and dedication.

These principles, expressed in the simplest terms, are to provide the best possible guards and to give the worker constant safety education and training.

And if there is nothing new about these principles, there also is nothing new about the ways people get hurt. After all, injuries are not inflicted by inanimate machines; injuries are caused by a force which is uncontrolled or

NOTE ON ILLUSTRATIONS: Except where otherwise indicated, the illustrations for this article are taken from The Prevention of Accidents *by John Calder, published in 1899, Longmans Green and Company, London.*



Vertical steam engine above has fencing as required by Factory Act of 1878, London, which states that "service platforms and approaches must be fenced in every case, both at outer edges and sides nearest machinery; double rails, the upper one of which should not be less than three feet in height and a fender or coaming six inches deep at foot level should be used."

improperly applied. Actually, the safety engineer is dealing with universal problems which have plagued mankind throughout history.

Accident prevention efforts did not begin in this century. Many of the hazards we think of as unique to our modern mechanical age were faced by the builders of King Solomon's temple, the Egyptian pyramids and the great wall of China. Necessity became the mother of invention, and thousands of years ago safety fundamentals were developed.

As early as 2000 B.C., the building code of King Hammurabi of Babylon contained construction safety rules, with severe penalties for noncompliance.

Two thousand years ago safety had progressed to the use of protective masks, which Pliny described in his *Natural History* as being made of transparent bladders and worn by workers to protect themselves from metallic dust during the preparation of vermilion.

George Bauer, better known as Agricola, in his famous 1556 treatise, *De Re Metallica*, discussed building safeguards in mines to protect mine workers. In listing mine accidents that had occurred, he commented, "Often, indeed, the negligence of the foreman is to blame."

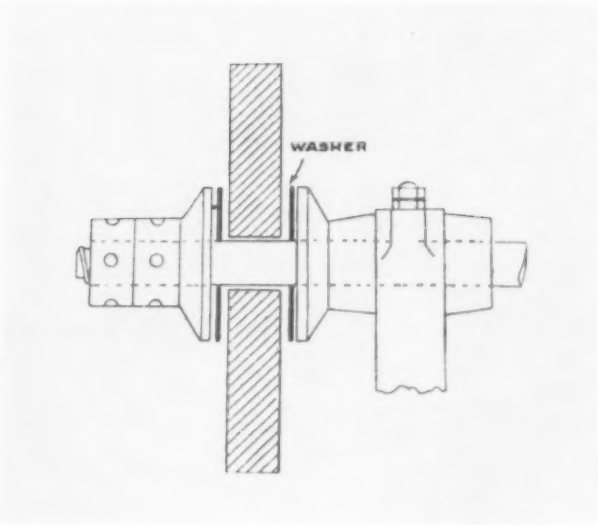


Figure shows safe grindstone mounting using a disc of India rubber or dry cardboard on each side between flanges as was required by the British Factory Act of 1895.

Deals with Age-Old Problems

Such human problems continue to present a challenge to the safety engineer today, of course. When he is faced with human failings such as carelessness and inattention, he is dealing with an industrial problem observed and recorded as early as the middle of the sixteenth century. The modern safety engineer likewise deals with mechanical problems that, in principle, are far from new.

For instance, steam pumps were being used to dewater mines in 1690. James Watt improved the steam engine in 1765 and it was used to power ships by 1800, and trains shortly thereafter. While these early engines of the reciprocating type have only limited use in industry today, the problems created by high pressure steam and high speed machinery remain.

But in spite of the fact that machines have been with us for many years, very few safety engineers will suggest that our development of physical guards has reached perfection. This area needs much further concentration. Those who have made studies of the matter estimate that ten per cent of all work accidents can be attributed to inadequate mechanical guarding.

The installation of mechanical safeguards also can add greatly to the employe's efficiency by removing his anxiety about the hazards of his job. Fear, and the distractions it sets up, not only slows production but renders employes even more prone to accidental injury.

It is, of course, useless to provide guards if they are not kept in position. While foremen should be held strictly responsible for misplaced protection, the basic fault often lies in the design or construction of the guard itself. Sometimes the designer fails to take into account some essential detail of operating procedure with which the guard seriously interferes and which may even increase the danger. In either case, the guard comes off and stays off as long as the operator is able to manage it.

In considering the overall effectiveness of any guard, perhaps the following four points can be used as a basis for judgment:

1. Protection afforded should be complete and continuous, and should protect absolutely the careless and the thoughtless. Not only should a guard protect the regular attendant but also the oiler, the mechanic and others in the vicinity. It should not be necessary to disturb a guard during the course of lubrication, ordinary adjustment, cleaning or other routine procedures. Bearings should be external to the guards unless remote oiling is used.

2. Protection should be designed to avoid interference with work that should be performed while the machine is in operation, and moving machinery should be visible through the guard.

3. Protection should be strong enough to withstand ordinary impact with a reasonable factor of safety with due allowance for wear and tear and frequent removal. We should never fail to appreciate, when designing belt guards, that a 100 horsepower motor has a 100 horsepower belt.

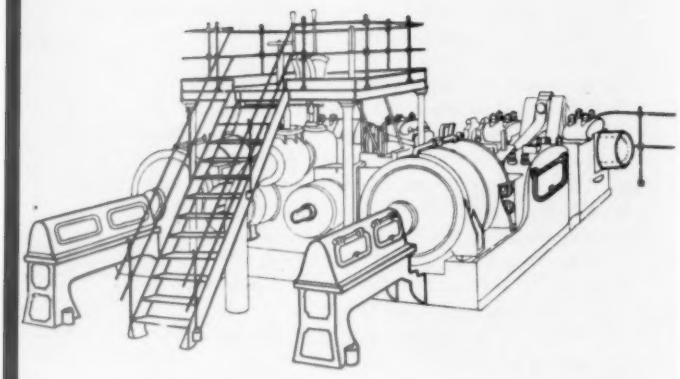
4. Protection should be as simple as possible, without complicated mechanical features.

In brief, a good guard provides maximum protection, does not interfere with production, provides adequate containment or isolation and is of simple construction.

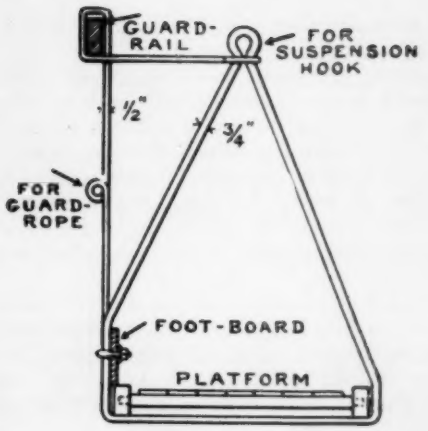
It is not always possible to satisfy all these requirements to the fullest extent. However, after learning fully the process and function of the machine, we should strive to design and apply the most effective guard that conditions will permit.

Education Often Neglected

While poor design may be a very important reason for an employe's failing to use a guard, another primary



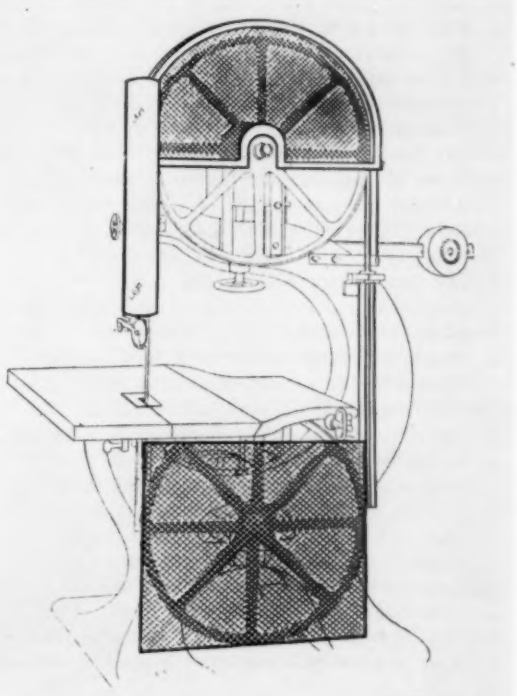
Statutory protection (1870) on rolling mill engine includes platform, hand rails and coaming. Also shown, as required by statute, is a shield at the side of the slide block path and a complete cover casting over the projecting ends of the piston rods.



Above is a sketch of a recommended rig for a suspension scaffold. This drawing was first published in an early American scaffolding handbook which came out in 1910.

Sketch below, from the 1910 American scaffolding handbook, showed safe way to construct a horse platform. Text stressed that four nails were required at point A while two were adequate at B. A six foot board also was considered essential by the author.

Figure below shows a well protected band saw (1875) in which wire netting, wood or other material was used to fence the moving parts below the bench and at the top of the pulley. Tubing or wood guides protected vertical portions of saw not used in cutting. On saws which had top pulley set lower, it was considered necessary to screen entire top pulley by extending the shield downward.



reason is found in the fact that too often the safety education of the operator is neglected.

A growing realization that a workman's safety does not depend altogether on the excellence of the guard has led to the placing of increasing emphasis on the worker himself. The operator's attitude must be considered as a potential cause of accidents or, from a more positive standpoint, as one of the strongest possible deterrents to accidents. He must be sold on the need for protection and educated in the procedures and precautions necessary to assure his safety on the job.

A comprehensive philosophy on which to build a well rounded guarding program has been outlined by Henry H. Hepburn, former chief deputy inspector of factories, London. Writing in *The British Journal of Industrial Safety* (Spring and Summer issue, 1948), he listed 11 fundamental principles, as follows:

Lists 11 Fundamentals

1. *The Principle of Inevitability.*
   An injury-producing accident will inevitably occur to a person employed on a machine having parts which experience has proved to be dangerous and which is normally used with the said parts not securely guarded.
2. *The Principle of Intrinsic Danger.*
   Certain parts or combinations of parts are intrinsically dangerous in that they have caused accidents in the past, are causing them at the present time and will continue to cause them in the future. In the assessment of the degree of danger likely to be encountered with any group of dangerous parts it is advisable, for absolute safety, to disregard associated functions such as rate of revolution, velocity of sliding parts and frequency of approach to parts. Experience has shown that, given intrinsic danger, an accident will inevitably occur, by the Law of Chance as enunciated by Heinrich, should the required combination be repeated a sufficient number of times.
3. *The Principle of Non-Reliance.*
   In the assessment of the degree of danger associated with any dangerous parts of machinery, no reliance should be placed upon the cooperation of any person employed in avoiding the accident.
4. *The Principle of Elimination.*
   Dangerous parts of machinery inevitably produce accidents so that, if all accidents are to be prevented, the danger of the said parts must be eliminated either by construction or by secure guarding.
5. *The Principle of No-Risk and Non-Use.*
   The intrinsic danger of certain parts of machinery having been established, it is essential for the prevention of accidents that no person should be exposed to the risk of injury at a machine possessing such parts when the dangers have not been eliminated. If the machine is dangerous in any respect it must not be used until rendered safe either by reconstruction or by secure guarding.
6. *The Principle of Training in Safety Precautions.*
   Since accidents will inevitably happen should unsafe acts be repeated by the personal factor, it is essential, in addition to eliminating the dangerous parts of machinery, that all persons should be properly and constantly trained in the knowledge and application of safe practice so as to reduce the repetition of unsafe acts.
7. *The Principle of Production Safety Efficiency.*
   The overall production efficiency of machinery depends upon the separate efficiencies of each factor involved. It is, therefore, essential for obtaining the highest possible overall efficiency, that not only should each machine be maintained at the maximum working efficiency but that all dangerous parts should be securely guarded and all operatives fully trained in safe practices so that the material and personal factor efficiency may be a maximum.
8. *The Principle of Safeguarding for Reverse Motion.*
   The design and fitting of any type of guard must be such that the dangerous parts are securely safeguarded not only for motion in the normal running way but also for their reverse motion.
9. *The Principle of Priority of Use of a Fixed Guard.*
   A fixed guard must always be the first preference for the safeguarding of dangerous parts of machinery and, if some redesign or rearrangement of the machine parts would enable such a guard to be used, then the necessary arrangements should be provided or redesign effected. However, we should not lose sight of the basic premise or the fact that even if any automatic guard is a good one its use is not justified if a fixed guard can be used instead.
10. *The Principle of the Best Guard Known.*
    The standard of any guard for any particular dangerous parts of machinery in a factory must be that of the best and most efficient guard known in the country as a whole and not merely that of the best guard in the district where the factory is located.
11. *The Principle of the Two-Hand Control.*
    Where the hands of the operator are necessarily placed between dangerous parts of a machine when the latter are at rest then, in addition to the requisite fitting of a suitable guard, the starting controls must be so designed as to require the operator to remove both hands from the danger area and use them to manipulate separate control devices, which must be independent in action but complementary in effect.

Hepburn concludes: "If we observe the 11 basic principles to govern a machine guarding program, there need be no major differences of opinion as to whether a machine should be guarded or not."

Need Uniformity in Decisions

This final comment becomes doubly important when it is considered that many safety engineers have been seriously handicapped because their recommendations have been considered as personal opinions, which have carried weight only in proportion to the importance which management has placed in its safety personnel.

When management is convinced that guarding is not subject to frustrating variations and that safety engineers can speak as of one mind, then the members of the profession will have earned a truly high position in industry.

The Mean Amines

Increasing use of these compounds is producing new problems for the safety engineer and the industrial hygienist.

by Philip J. Bailey

DURING the past several years the use of the amines as components of epoxy and isocyanate resin formulations has become more widespread in industry. The amines are used as hardening or curing agents for the resins when used as adhesives or bonding devices with such things as fibre-glass and plastics. They are being used more frequently with these resins in casting, laminating, molding and other structural applications. One such use, recently perfected, has been the fabrication of a fibre-glass reservoir which safely holds a pressure of 3000 pounds per square inch of compressed gas. This is a reservoir as strong as steel, yet with only a fraction of steel's weight.

But these amine curing and hardening agents are presently providing king-size headaches for the safety engineer and the industrial physician. All of the amines are strongly alkaline, causing caustic burns when coming in direct contact with the skin. Some of the newer curing or hardening agents, while not quite so caustic, provide another problem because of their dye base, which upon oxidation makes dark spots on clothing which in turn stains anything it comes in contact with, and quite permanently.

This dye base also causes the skin to turn yellow, a coloration that can only be removed by a long passage of time, plus removal of the individual from further contact with the amine while he is bleaching out.

However, the most insidious damage perpetrated by the amines is caused by frequent exposures to low concentrations of these catalysts. Such exposures, after a period of weeks, months or even years, will produce a sensitization-type dermatitis which may become more extensive and severe with progressive exposures.

This sensitivity usually makes its first appearance around the eyes of the victim, which become swollen almost shut. This happens most suddenly—so suddenly, in fact, that a person who has been working with the curing agent for some time without any apparent trouble may attribute the sudden swelling and intolerable itching to something else. Hive-like swelling on the face and neck usually accompanies the attack. This pattern of physical discomfort continues as long as the individual is exposed to the vapors of the amines.

Thereafter, although the swelling and itching subside, the sensitivity to the amines in many cases is quite permanent, and it becomes necessary to remove the person from any further exposure. Because of this required transfer of skilled workers, loss caused by the sensitivity factor alone can be considerable.

Doctor Thomas W. Nale, medical director of the Industrial Medical and Toxicology Department, Union Carbide and Carbon Corporation, wrote, in part, in September, 1954, in answer to the author's query about Dr. Nale's experience with the amines:

"It is our understanding that the majority of individuals who become sensitized to such materials (amines) develop a sensitivity which is quite permanent and it is necessary to remove them from exposure. Once a person becomes sensitized a very minimal exposure can cause a return of the symptoms."

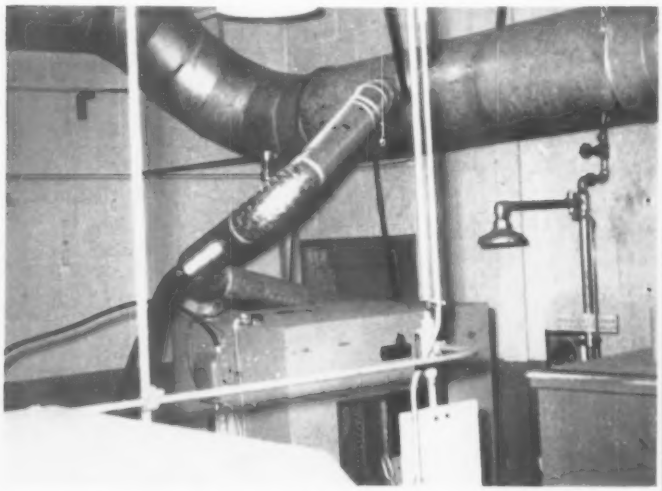
Doctor Nale goes on to say in his letter, "These hardeners can be handled in such a manner as to prevent any excessive exposure." The author's experience confirms this statement.

The chief medical officer of a large aircraft company who had these amine sensitivity problems to contend with made the following statements:

"New employes, engaged in glass cloth lamination using a resin with an amine solvent-catalyst, reacted with

Philip J. Bailey is safety engineer for Walter Kidde and Company Inc., and a member of the New Jersey Chapter of the American Society of Safety Engineers. He serves as chairman of the Industrial Committee, Newark Safety Council, and has written many articles on accident prevention subjects.

Employe who works with amines and resins prepares to apply barrier cream to face and hands. He has washed thoroughly with soap and water before applying the barrier cream.



Above is a partial view of ventilation system in resin-amine operation. Each machine, oven and chamber is exhausted through 3500 cfm line overhead. Note emergency shower.

THE MEAN AMINES *Continued*

a skin irritation within 12 to 21 days after exposure. The hands, arms and face were affected, especially in the folds of the skin where perspiration appears to be most dense. Men with fair complexions, blue eyes and thin skin appear to react more violently than those with thick, sallow skin."

For some unknown reason some individuals may never become sensitized to the amines. Others may take years to become sensitized. The theory that persons with darker skins have higher immunity to the sensitizing effects than blond or fair-skinned persons has not been proven conclusively. One company that has tried out this theory has still had a high incidence of amine-dermatitis among its darker-than-blond personnel. The color or texture of the skin seems to provide no real or sustained immunity to overexposure.

Many cases are on record where individuals who have become acutely afflicted and then recovered, after removal from exposure, have had violent return of the swellings and itchings after walking through a room where a small open vial of the amine was present.

There also are cases where the symptoms have returned because the individual was working in an air-conditioned room in which air, returned from a section where the amine was being used, was recirculated in his work area.

Should the amine be splashed into the eyes it will cause severe damage very rapidly. High vapor concentrations also will produce eye irritation and attack the mucous membranes.

No history is available at the present time that would indicate any acute systemic poisoning from contact with the amines. Of course, they should not be taken internally for the same reason that insecticides, dyestuffs or resins should not be placed in the mouth or swallowed.

The free amines are here to stay because they are serving more and more frequently in industry and are becoming an integral part of many fabricating and structural processes. They are reaching out even further, into the do-it-yourself workshops in the home, into pleasure-boat building and repair, plastic repair and model making, and they are being found more and more frequently in airplane hangars and garages.

Used occasionally or infrequently, they present no problem and may never cause trouble. However, when they are used certain primary safeguards must be set up and maintained.

The most important step in the prevention of amine-dermatitis is proper personal hygiene. Skin contact with the amines must be minimized. This includes the solvents and the formulated mixtures of resin and amine.

Personnel working with these materials and mixtures should be provided with showers, washbowls, mild soaps, clean towels, aprons, coveralls, gloves, barrier creams and refatting creams. There also should be a designated time for cleanup before mealtimes, smoking and other break periods.

When the skin is contaminated it should be cleaned thoroughly with soap and water. If there is massive spillage upon the person, remove the wet clothing at once and shower the body with water. Thereafter treat the area of contamination as you would any chemical burn.

Emergency eye and body showers should be provided to treat quickly all accidental eye and body contacts. Eyes should be washed for fifteen minutes with copious

Worker wears gloves, apron, plastic sleeves in cleaning machine parts that contact formulated materials. Exhausted chamber has sliding door, two arm holes, glass window.

Ventilating system and gloves are necessary for safety of chemist measuring amine and resin for repair job. Sheet of cellophane across booth's face protects from splashes.

amounts of water in cases of accidental contamination. Then, if there is any question of serious eye involvement, such a case should be referred to an ophthalmologist.

Wearing of soiled or contaminated clothing should be discouraged. Coveralls or aprons should be used by all persons who have continual or prolonged contact with the materials.

Gloves should be worn to avoid any possibility of skin contact. When the gloves become contaminated, as they will, they should be reconditioned by washing in acetone or alcohol, followed by soap and water.

Protective creams of the barrier type have proven effective if used regularly and properly on face, neck, hands and arms. However, care must be taken that the amines are not locked to the skin under the cream. Skin must be washed thoroughly with soap and water before applying the cream. Usually the barrier creams that provide protection against alkalis will provide some measure of protection against the amines.

Full face shields to protect the eyes are advisable whenever there is danger of splashing.

All operations of mixing and application should be hooded and ventilated, and the entire working area, including the processing and fabricating machines, should have excellent exhaust ventilation facilities.

Working in elevated temperatures increases the hazard of personal contamination and thereby increases the importance of observing the recommended safe practices and procedures. Curing is usually done in ovens at temperatures from 160 degrees to 300 degrees Fahrenheit. Therefore, these ovens should be hooded to carry off any escaping amine vapor released by the increased temperature.

Worker demonstrates emergency combination body and eye shower. Pulling chain will deluge body with 40 gallons of water a minute. A foot pedal activates the twin eye wash.

Worker places decal label around neck of a fibre-glass sphere. Protective equipment includes apron, plastic sleeves and rubber gloves to keep the resin material off hands.

Tests have indicated that once the marriage of the resin and the catalyst has taken place no sensitizing danger exists. However, any method of regenerating the vapor—by contact with a solvent, by sawing, milling or grinding the hardened material—can set up a new exposure to the sensitizing action of the amine.

The free amines are flammable liquids, as are the solvents that are frequently used with them to clean machine parts, winding or other devices that come in contact with the compounded materials. Therefore, standard procedures for providing fire protection should be followed. Safety cans should be used for storing the acetone or other solvent used for cleaning parts and all handling of these solvents should be conducted in a well ventilated area. Carbon dioxide portable fire extinguishers are quite effective in fighting and controlling early blazes.

The amine catalysts can be worked with every day, safely, without serious consequences, so long as we respect them. Housekeeping, hygiene, protective clothing, proper handling techniques and ventilation are the important things to remember.

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Steel-strong reservoirs, being packed for shipment, though light, will hold 3000 psi.

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AMERICAN SOCIETY OF SAFETY ENGINEERS

Membership Information

THE American Society of Safety Engineers has established the following classifications of active membership:

MEMBER —To be eligible as a Member an applicant shall be at least thirty years of age and shall be engaged in safety engineering. In addition, he shall have either an engineering or science degree in an accredited college curriculum and the equivalent of eight full years' experience in safety engineering; or he shall have had the equivalent of ten full years' experience in safety engineering.

ASSOCIATE MEMBER—To be eligible as an Associate Member an applicant shall be at least twenty-five years of age and shall be engaged in safety engineering. In addition, he shall have either an engineering or science degree in an accredited college curriculum and the equivalent of three full years' experience in safety engineering; or he shall have the equivalent of five full years' experience in safety engineering; or he shall have either an engineering or science degree in an accredited college curriculum, ten years' experience in professional engineering work and one full year's experience in safety engineering; or he shall have twenty years' experience in engineering work, of which at least ten have been at the professional level, and one full year's experience in safety engineering.

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AFFILIATE MEMBER —The Society also provides a special classification, that of Affiliate Member, for those not professionally engaged in safety engineering. To be eligible as an Affiliate Member an applicant shall be at least twenty-five years of age and shall have contributed to the advancement of safety engineering through demonstrated achievement in some related field of interest in which he has been engaged for at least three years.

for additional information write to

The American Society of Safety Engineers
425 North Michigan Avenue
Chicago 11, Illinois

(or contact your local chapter)

SAMMY SAFETY'S NOTEBOOK

By Arthur S. Kelly

Industrial Department, NSC

Two Winners for October

There was a tie in voting for the best idea in the October issue, between the door guard for boxcars and the gas cylinder storage rack. This means that both the Bethlehem Steel Co., Sparrows Point Plant, and John E. Smith, of the Spencer Chemical Co., will have their choice of a Parker "51" standard fountain pen or a cigarette lighter of black and gold Italian marble.

Our "cushion" of ideas mentioned last month is gone. We need more contributions. Check your files and look around the plant. The ideas and devices are there—some may have been developed purely for a production advantage, but if they make an operation safer, they qualify here.

Interlock Prevents Accidental Dumping

The addition of a gravity interlocking device on this scrap hopper prevents accidental dumping and eliminates exposure to serious injury.

Submitted by O. J. Peel, Safety Div., Burroughs Corp., Detroit, Mich.

Warning Device For Ladder Trucks

Sometimes ladder trucks are started with the ladder in a raised position. To prevent such occurrences, this warning device was developed. When the ladder is raised a sign reading, "Lower Ladder Before Moving Truck," swings into position directly in front of the driver.

Submitted by William F. Bachman, Omaha Public Power District, Omaha, Neb.

Fire Hazards!

901—9

257—B

228—N

1422

970—95

232—5

STONEHOUSE SIGNS

For Accident Prevention

The fire siren! It tells of danger, destruction, loss. But before it ever sounded, there was a cause. Carelessness usually sparked the first small tongue of flame.

Jobs, property, even life, often pay the heavy penalty to fire. Its toll runs into staggering loss of investment and human values yearly.

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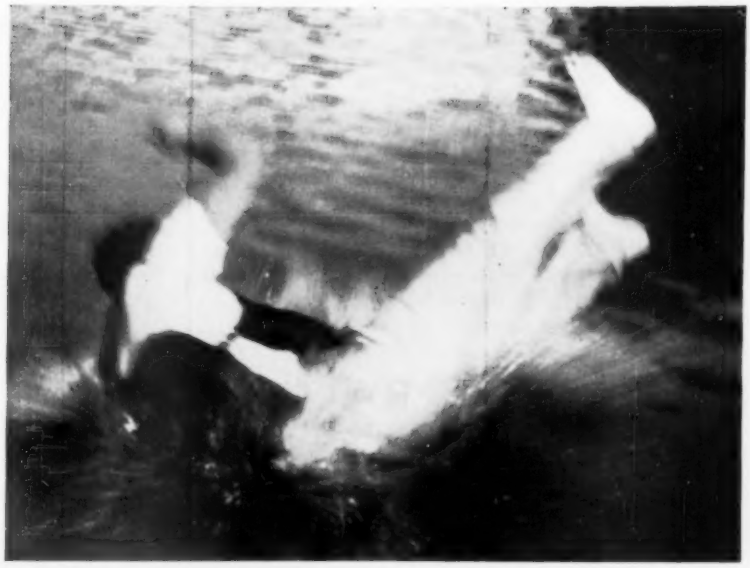
K

ACCIDENT PREVENTION • *steel* SIGNS IN STANDARD COLORS AND DESIGNS

SAFETY MAN Bill Thompson donned this costume for a publicity photo which appeared in the local papers.



INTO THE SNOHOMISH RIVER goes the "coxswain" of the winning "crew." Safety Supervisor Thompson was tossed there by safety committee members to celebrate 171 days without a lost-time accident.

This Safety Man's All Wet

But his sodden condition is symbolic. As "coxswain" of a winning "crew," he let his team members toss him into the river to celebrate a new record of 171 no-accident days

LIKE the loyal and rugged coxswain of any winning racing crew, Bill Thompson grinned and took it when his team members tossed him into the cold waters of the Snohomish River at Everett, Wash., last September. What made this dunking ceremony something special, however, is the fact that Bill Thompson is no coxswain—he's safety supervisor for Simpson Paper Company. And his "crew" members are no accomplished oarsmen — they're members of Simpson's Plant Safety Committee.

This stunt, the subject of a prolonged, all-out build-up campaign, celebrated the bettering of the company's existing record of 170 accident-free days. Haak Berger, assistant pulp mill superintendent and safety committee member, came up with the idea last spring. It caught on and when the 120-day mark was reached it was presented to the entire working force by means of mimeographed handouts and a special poster display.

The publicity sparked intense interest and added fun to the effort. As the big day, September 28, drew near Mr. Thompson took a lot of kidding about his imminent plunge. The pipefitters said they had a special 12-in. collar; the blacksmith offered to donate an anvil . . . everyone wanted to get into the act.

Management decided the event justified shutting down most of the mill so that as many employees as possible might view the dunking. To help workers celebrate, all vending machines were rigged to dispense free coffee and soft drinks for 24 hours, with the servings being donated by local distributors.

News agencies were informed and television, radio, and newspapers covered the story. Seattle's KING-TV gave it coverage on its evening news program, Everett's radio station KRKO transcribed a blow-by-blow description, and the Everett *Daily Herald* gave it three big spreads.

Scott Paper Company's safety supervisor, Bill Collins, stood by ready to dry the sodden, shivering "coxswain" with some of his firm's products.

Special recognition went to three departments whose outstanding records had helped break the record: the pipe shop, with 3,537 accident-free days; the log

dump, with 2,778, and the box factory, with 2,381. Also honored was Jerry Johnson, chairman of the plant safety committee, for his efforts in promoting the special day.

Behind the new safety record, says Supervisor Thompson, is an accident prevention program built on teamwork. He lists the successful ingredients as top management support, full partnership on the part of the union, a loyal group of supervisors who are willing to "try anything at least once," and the broad acceptance of the program by all employees.

The program really began in 1952 when Pat Reiten, general safety supervisor for the parent firm, Simpson Timber Company, set up a formal approach to accident prevention and good housekeeping. By May 1955 the Simpson Paper Company had established a record of 170 accident-free days, reduced frequency by 90 per cent, and won the National Safety Council's Award of Merit.

Not until last January, however, did Simpson set up a separate safety department with a full-time safety supervisor. The program's organization follows the pattern of top level approval and follow-through, with a plant safety committee representing each department, specific duties delegated to subcommittees, and department level "stand-up" meetings.

Injected into this stream are department bulletin boards; newsletters; incentive awards; programs for safety shoes and glasses and good housekeeping; first aid courses, and the issuing of a variety of safety devices and protective equipment.

HAPPY WINNERS pose with their safety merchandise prizes. Five names are drawn each month from departments having 30 accident-free days.

First aid classes for hourly employees were organized and held during working hours under the instruction of the local fire department captain and a police sergeant. First-aid kits were presented to employees completing the 18-hour course.

Wendell Fisher, senior first aid instructor with the Washington State Department of Labor and Industries, conducted a special five-day course for 32 supervisors.

Two hundred and twenty-five employees attended a grand opening of a safety shoe store where both men's and women's shoes can be purchased at factory prices on a payroll deduction plan. A near-accident the day of the opening dramatized the protection afforded by hard-toe shoes when an employee wearing his new purchase pulled a steel drawer filled with metal scrap onto his toes. Total damage was a slightly scuffed shoe.

A merchandise incentive plan

—*To page 144*

HORSES on this "Sweepstakes" board represent competing departments in housekeeping contest. Each employee in winning department receives a silver dollar.

WASHINGTON'S Governor, Arthur B. Langlie (second from right), visited the mill. Here he views special safety display with plant officials.

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*#303 26 April 1955
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SAFETY OFF THE JOB

Suggestions for company and community programs

By **GRANT O. SHIBLEY**

NSC Staff Representative, OTJ Safety Committee

This is the first of a series of articles on the objectives and advantages of an off-the-job safety program as expressed by general chairmen of various sections of the National Safety Council's Industrial Department.

This month's comments come from Glenn G. Fleming, director of safety and fire protection, Celanese Corporation of America, and general chairman of NSC's Textile Section.

Industrial workers suffer many more injuries off the job than they do at work. These non-occupational accidents represent much more than pain and suffering to the individuals involved; they upset normal home lives and cause appreciable economic loss in many ways to both the injured employee and his employer.

The company that neglects an off-the-job safety program is missing a good bet. My own firm finds that 87 per cent of all lost-time injuries to employees occur at home or on the highway.

Objectives of an O-T-J Safety Program

1. To eliminate injuries to employees and members of their families.

2. To help industrial workers avoid wage loss and medical expense which is frequently incurred as a result of an accident.

3. To reduce insurance claims arising from non-occupational accidents.

4. To reduce absenteeism and increase worker efficiency.

5. To promote good will among employees by showing the company's sincere interest in their safety while off the job as well as during working hours.

6. To develop a safety consciousness in each worker that he will apply regardless of the situation and regardless of where it occurs—on or off the job. A good off-the-job program definitely helps to reduce accidents on the job.

Why Off-the-Job Safety Is Important

1. From the humanitarian viewpoint it eliminates suffering, strengthens a feeling of security, promotes community good will, and means that industrial workers and their families can live a happier, fuller life.

2. Injuries, whether they occur on or off the job, cost money. In addition to the costs deriving from insurance claims, surveys of off-the-job injury experience reveal that it affects plant operating costs as follows:

a. Relief personnel is necessary.

b. Training of substitute employees is necessary.

c. Many times equipment is damaged and product spoilage occurs by replacement personnel.

d. Additional work load is placed on supervision.

The humane ideals of American industry demand that steps be taken immediately to reduce the number of off-the-job accidents just as industry has met the challenge of reducing occupational injuries.

EIGHT MONTHS SUMMARY - 1956
OFF-THE-JOB LOST TIME INJURY EXPERIENCE
OF 75 COMPANIES REPORTING TO NSC

NUMBER EMPLOYEES	Group I August 130,381		Group I 8 Months 774,038		Group II* August 203,171		Group II* 8 Months 916,810	
	No.	Days Lost	No.	Days Lost	No.	Days Lost	No.	Days Lost
TRANSPORTATION	93	3143	599 (15)	18219	110 (5)		513 (24)	
Auto-Truck	88	2714	567 (14)	12994	104 (5)		489 (23)	
Bicycle	0	0	2	50	1		2	
Bus, Streetcar	0	0	2	21	2		2	
Motorcycle	2	48	13	150	1		10	
Railroad	0	0	0	0	0		1	
Boats	0	0	2	13	1		3	
Pedestrian	2	110	8 (1)	319	0		1 (1)	
Other	1	271	5	672	1		5	
HOME	181	3441	979 (1)	14333	190		856 (3)	
Firearms	2	77	9	205	0		0	
Machinery, Tools	21	410	89	1345	19		88 (1)	
Fire, Explosion	2	33	15	291	2		24	
Electricity	0	0	2 (1)	6	1		2 (1)	
Toxic, Material	9	14	25	73	2		13	
Fall, Slip	69	1846	425	7886	89		369	
Improper Lifting	17	223	84	978	12		77 (1)	
Hot Object, Material	6	93	20	266	5		24	
Struck by Object	14	156	86	869	13		95	
Sharp Object	21	283	112	1081	27		78	
Other	20	306	112	1333	20		86	
PUBLIC	57	1061	467 (1)	6954	105		485 (4)	
Firearm	0	0	9	92	2		8 (2)	
Sports	13	181	111	1194	53		216 (2)	
Fire, Explosion	0	0	2 (1)	12	1		2	
Fight, Assault	5	37	49	566	5		32	
Animals, Insects	1	10	5	49	4		15	
Exposure, Heat and Cold	3	12	22	73	12		53	
Fall, Slip	23	578	208	4221	5		81	
Struck by Object	5	150	26	419	5		21	
Other	7	93	35	328	18		57	
TOTALS - (OFF-JOB Injuries)	331	7645	2045 (17)	35506	405 (5)	8186	1854 (31)	30,880
TOTALS - (ON-JOB Injuries)	55 (1)	3072	374 (5)	16415				

Note: Figures in parentheses are the number of fatalities included in adjacent figures.
* Group II is a separate group of reporters who do not include breakdown of days.

State Supervises Ski-Lift Safety

ENFORCEMENT of the Aerial Passenger Tramway Safety Orders, which became effective recently, was begun in October by the California Division of Industrial Safety of the Department of Industrial Relations, according to an announcement by Ernest B. Webb, director of the State Department of Industrial Relations.

First official inspections of ski lifts were made in the Sierra, Donner Pass and Sonora regions by engineers of the Division of Industrial Safety.

The Orders are the first of their kind in the country, and will fill a long-sought need for safety regulations covering aerial passenger tramways. The Orders include chair lifts, aerial cable cars, "J" and "T" bars and rope tows. While they are specifically designed for the safety of employees, they will add to the safety of the general public using them.

Working Up in the World with Ladders

"Gold Medal" Ladders Help Prevent Accidents on off-the-Ground Work

Extension Ladder with ladder jack makes a dependable stage support for painting windows and other work. "Gold Medal" Safety Extension Ladders are approved by U.L.

Sturdy 1⅝" rear rungs provide safe support for assistant on "Gold Medal" Safety Platform Ladder. Platform heights from 3' to 18'. Conforms to all safety codes.

Safest Step Ladder made the "Gold Medal" Safety Platform Ladder features a 14" x 19" platform plus a slotted tool rack at the top. Tools can't drop off and injure workers or machinery; man on ladder can safely work in any direction using both hands. Approved by Underwriter's Laboratories, Inc.

Lightweight Aluminum Ladders make handling easy, safe. Single ladders to 20', aluminum extension ladders to 40', step ladders to 8'.

These "Gold Medal" Safety Extension Trestles put workers at right height. Heights from 10' to 28'. Tested and approved by U.L.

Write now for free copy of Catalog L-71-R. See the Yellow pages of your 'phone directory for the nearest Patent Scaffolding Co. office or representative that handles "Gold Medal" Ladders and Scaffolds.

FOR GREATER SAFETY...EFFICIENCY...ECONOMY

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Branches in all principal cities

NSC Awards

—*From page 58*

in traffic safety, as measured by the Council's Annual Inventory of Traffic Safety Activities. The plan provides for the following awards:

Award of Honor, to any state achieving a rating of 85% or more on all sections evaluated in the Inventory, or to any city achieving a rating of 80% or more on all sections of the Inventory.

Award of Merit, to any state achieving a rating of 75% or more on all sections evaluated in the Inventory, or to any city achieving a rating of 70% or more on all sections evaluated in the Inventory.

Certificate of Achievement, to states achieving 85% or more on certain sections of the Inventory, or to cities achieving 80% or more on certain sections of the Inventory.

Other awards given in connection with the Traffic Inventory are:

Court Award, given by the American Bar Association.

Police Traffic Supervision Award, given by the International Association of Chiefs of Police.

Traffic Engineering Award, given by the Institute of Traffic Engineers.

Driver Licensing and Periodic Vehicle Inspection Award, given by the American Association of Motor Vehicle Administrators.

Public Safety Activities Awards to Railroads. These awards are presented to railroads for significant and constructive public safety activities directed at both the general public and their employees. Winners are decided by a Board consisting of the president of the National Safety Council and four other judges.

Citation Awards for Traffic Safety Activity. These awards are given in recognition of outstanding services to traffic safety by individuals and organizations whose efforts might otherwise not be recognized. Six awards are made annually to individuals and twelve awards are made to organizations.

Award rules and nomination blanks are available from the Director, Public Education Division, NSC.

President's Medal. The President's Medal Award is granted for successful resuscitation, by the Schafer Prone Pressure and Holger Nielsen Arm-Lift Back Pressure Methods, from asphyxiation by gas, suspended breathing caused by gas or carbon monoxide poisoning, drowning, or electric shock, or any other accidental causes that may result in prolonged suspension of voluntary or natural breathing. This award is the only NSC award for saving of human life.

The award is granted upon investigation and approval by a nonstaff Medal Administration Committee of a completed application form, supported by signed statements of witnesses and attending physician. Applications are available from Medal Administration Committee, NSC.

Aviation Safety Awards. Aviation Safety Awards are granted annually to those air lines having scheduled operations under the American flag in domestic, territorial, or international service. The awards are made automatically, on the basis of official records of the Civil Aeronautics Board, to those air lines completing the calendar year without a passenger or crew fatality in scheduled passenger-carrying flight operations.

Special Achievement Awards (Local Councils). This program recognizes successful safety activities conducted by local safety organizations in all areas except home safety. Soundness, planning and execution of program; results obtained; cooperation of other agencies and arousal of public interest are some of the points considered by the judges in selecting award winners.

Chapters of the Council are eligible to participate in this award program. It is sponsored by the Conference of Local Safety Organizations and administered by the Field Service Department of NSC.

Carol Lane Awards. Made possible by a grant from the Shell Oil Company, the Carol Lane Awards honor contributions of American women to traffic safety. Awards are made each year to three women and to three women's organizations. First place winners receive a $1,000 savings bond and a bronze sculpture. Second place winners receive $500 savings bonds and bas relief plaques. Third place winners receive $250 savings bonds and bas relief plaques.

Applications are available from the Director of Women's Activities, NSC.

Farm Safety Achievement Awards. These awards recognize outstanding achievement on behalf of farm safety. Three levels of awards are provided for both organizations and individuals as follows:

For organizations: Award of Honor, Award of Merit, Certificate of Commendation.

For individuals: Citation for Distinguished Service to Safety, Citation for Outstanding Service to Safety, Citation for Meritorious Service to Safety.

Home Safety Awards. These awards are designed to promote interest in the home accident prevention problem and to recognize creditable effort on behalf of home safety. Two awards are made: Award of Merit and Certificate of Commendation. The program year is from January 1 to December 31.

Rules and report forms are available from the Home Division, NSC.

Association Safety Awards. These awards are presented each year to recognize outstanding safety program activities by associations. To be eligible, the association must be a member of the National Safety Council. The awards are based on outstanding reduction of work injuries of employees of members of the association and for programs to promote occupa-

For skidproofing, sprinkle ZORBALL *freely on icy, wet walks, drives, etc.— or spread on floors to absorb oil, grease, paint, chemicals.*

Wyandotte ZORBALL underfoot makes icy areas safe!

Eliminate the danger of slipping to both workers and vehicles this winter, with skidproof Wyandotte ZORBALL! A thin layer of ZORBALL on icy walks, platforms, loading and shipping docks, ramps, and driveways will prevent accidents and work delays. And ZORBALL won't cake, mud, dirt, or track!

All-purpose ZORBALL is the safest floor absorbent you can buy! It has no effect on fabric, wool, metal, rubber, or skin . . . absorbs water, paint, oil, grease — any liquid — and it is *fireproof*, even when saturated with combustible liquids. Use it indoors or outdoors . . . on any type surface.

You'll save, too, with ZORBALL's low use-cost, resulting from a greater resistance to breakdown than any other floor absorbent!

Try a free sample, now! Mail coupon at right, today, or call your Wyandotte representative or jobber. *Wyandotte Chemicals Corp., Wyandotte, Michigan. Also Los Nietos, Calif.*

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Helpful service representatives in 138 cities in the U.S. and Canada

Largest manufacturer of specialized cleaning products for business and industry

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☐ Send free sample of ZORBALL
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tional safety among small employers. Thirteen associations won awards in 1956.

A brochure and application check list is available from the Associations and Small Business Division, NSC.

Public Interest Awards. These awards recognize and honor exceptional service to safety in the field of public information and communications. They are made to newspapers, radio and television stations and networks, magazines, advertisers, outdoor advertising and transportation advertising organizations. Company employee publications are not eligible for these awards (see Employee Publications Awards below).

For newspapers there is an additional award—the Christmas Safety Cartoon Award, a plaque awarded for the best editorial cartoon on holiday season hazards.

Information and application forms for Public Interest Awards are available from the Public Information Department, NSC.

Alfred P. Sloan Award. The Alfred P. Sloan radio-TV award for highway safety, established by the Sloan Foundation and administered by the Council, recognizes outstanding public service in the field of traffic safety by a radio or television station or network, and by advertisers using these media. To be eligible for the Sloan Award, the radio-TV station or network must have won an NSC Public Interest Award (see above).

Employee Publications Awards. Awards are presented each year to employee publications for best coverage of safety and for best original articles on safety. There are four divisions in the program: company magazines, company newspapers, safety bulletins, and publications for supervisors and engineering personnel. Judging is made by a committee of NSC and International Council of Industrial Editors representatives.

Write to Editorial Division, NSC, for complete information.

Limerick Contests. To stimulate employee interest in safety, NSC runs three limerick contests, in *Industrial Supervisor* magazine, in *Safe Driver* magazine, and on the back of the NSC calendars.

Write to the Membership Department for sample copies of these publications.

National School Safety Honor Roll. Certificates are presented to those schools which meet basic safety program requirements. Information and applications are available from the School and College Division, NSC.

Effective Guarding

—From page 31

boiler was smoking, no sound was heard. Somebody had opened up the box and blocked the alarm with a stick. The box was then disconnected and moved 35 ft. up on the wall and now the alarm went back to work.

The firemen were convinced that they had to put up with it. After a short time they demonstrated with pride how they could shift burner tips without setting off the alarm.

Guarding of a machine toward other machines or people must also be considered. Improper flow of material to the machine, improper ejection or storage of finished products may upset production and impair the function of the unit in question, as well as affecting nearby units and their operators.

If air ejection is part of the operation, the air container may be of substandard design as compared to the operating pressure under which it operates. The tanks may not be blown down regularly, thereby throwing a heavy burden upon compressors both from a load and from a temperature standpoint.

If pressure reducers are employed, safety valves set at the reduced safe working pressure should be provided on the tanks and should be tested regularly as an additional safeguard to man and machines.

In fact, this is a very important point, often violated in older plants and where revamped equipment is used. Tanks with plus and minus heads are installed with the negative head down, giving poor drainage and causing corrosion from condensation below the point of drainage. Tanks installed directly on the floor, on the negative head, also are exposed to corrosion and weakening. The guard recommended here is to install the tank on a stand about 12 in. off the floor with the positive head down and the drain at the bottom.

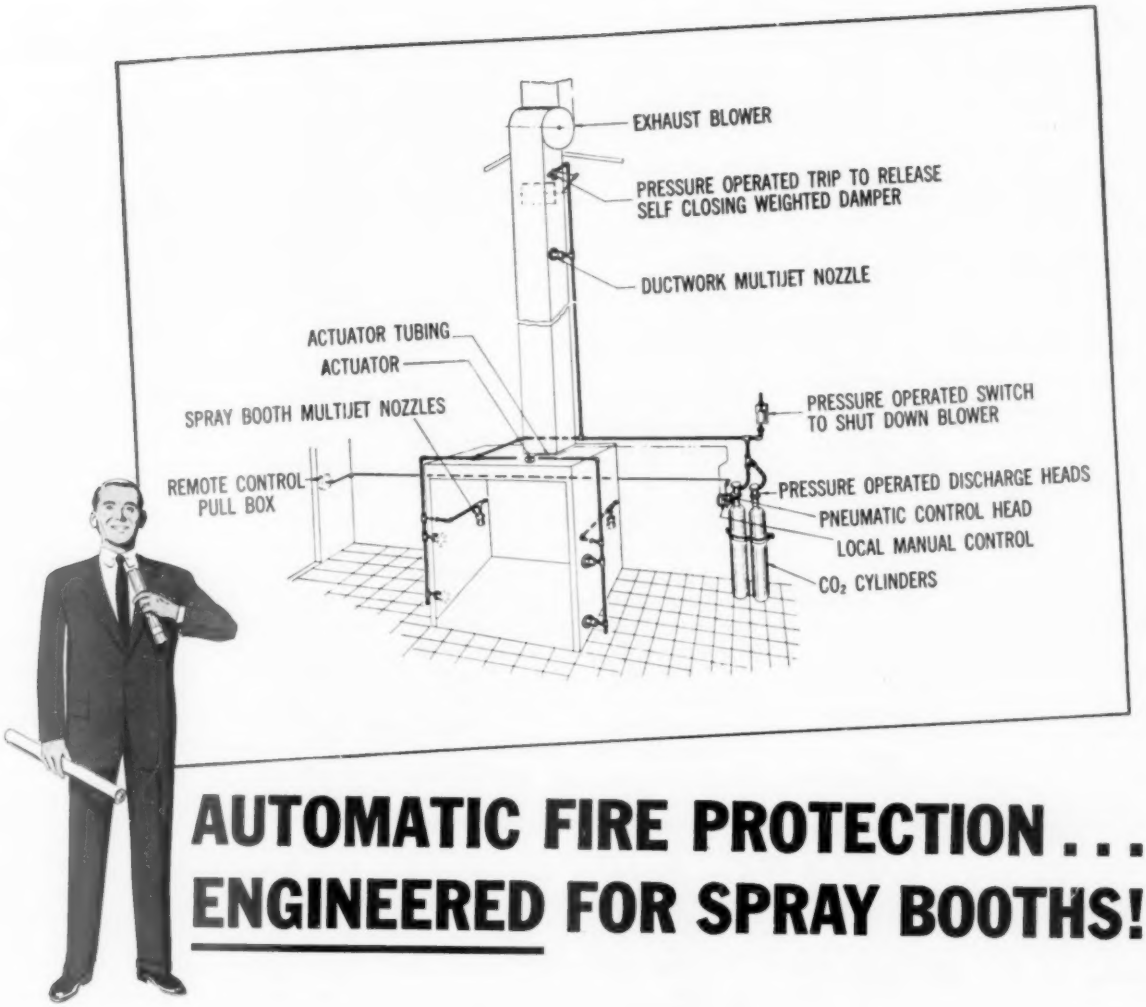
Guarding emery wheels involves enclosure guards of sufficient strength to retain the fragments, with an opening only at the point of operation, 90°-125° maximum of the circumference. Other safeguards include using wheels constructed for safe use at available motor speeds, main drive protection and unbreakable shields.

Flywheels are carefully designed for certain speeds, but in alteration of equipment such speeds may be exceeded. The wheel size, construction details, and actual speed should be checked as a precaution against rupture. Enclosures around such wheels and units protect workers from becoming entangled, but are ineffective against flywheel rupture.

Solutions are usually found and are surprisingly simple at times. In a power plant, for example, a large steam engine was installed as a prime mover for a generator. Everything was perfect—with one exception. Two grease cups for two eccentrics were located directly on the eccentric bearing housings. When the oiler tried to catch the buttons with a grease gun he would either hit his hand against the bearing caps or the grease gun would get caught between the eccentrics.

The remedy was simple: The grease fittings were removed from the eccentrics and mounted on the stationary frame. Then flexible hoses were installed between the fittings and the grease lines. The manufacturer had overlooked this arrangement.

The machine was well designed in every respect and it had undergone a factory test run. Many similar machines had been made. The designer provided proper lubrication but did not stop to think or perhaps care about the difficulty the oiler would have. The



AUTOMATIC FIRE PROTECTION . . . ENGINEERED FOR SPRAY BOOTHS!

SPRAY BOOTHS can be tricky – safe one minute, ablaze the next. Because they are a special kind of fire hazard, spray booths demand a special kind of *fire protection.* Like a Kidde *Automatic* CO_2 Fire Extinguishing System.

By means of rate-of-temperature-rise detectors, a Kidde system spots – and smothers – even the most vicious blaze the instant it begins . . . pouring clouds of CO_2 over the flames through wide-dispersion Multijet nozzles.

Thanks to the nature of clean, efficient CO_2, a Kidde system leaves no mess to clean up. CO_2 will not harm production equipment or work-in-process . . . it snuffs the fire, then vanishes.

Furthermore, Kidde systems are of the most *advanced* design. They use no falling weights, no old-style mechanical triggering methods. Instead, Pneumatic Control Heads insure an instant and complete discharge of CO_2.

In Kidde tamperproof systems, each moving part is self-enclosed – a safety measure to prevent accidental discharge. And easy-to-read visual indicators show quickly whether the system is "set" or "released." Finally, there are special Directional Valves which let you protect more than one hazard from the same bank of cylinders – a feature that means the most versatile of fire protection.

For more information on the best in fire extinguishing systems, and help in your specific problems, write Kidde today.

Kidde

Walter Kidde & Company, Inc.
1145 Main St., Belleville 9, N. J.

Walter Kidde & Company of Canada Ltd., Montreal – Toronto

assembly and testing crew did not suggest any improvement and released the unit to the customer.

The machine was installed by the manufacturer's service engineer who had acquired the knack of catching the grease cups with the gun. One could draw the same conclusion that it is easy for a man after long training to balance on a slack wire, but it is hard to acquire the habit in short order.

From our point of view we proceeded as follows:

1. We see the machine in operation.
2. We see the speed at which the grease cups move back and forth.
3. We look over the gun and we see how difficult it is for the oiler to catch the buttons with the gun.
4. We realize how easily the operator's hand can get caught in the eccentrics.
5. We realize how easily the head of the grease gun can get caught between the eccentrics.
6. Jamming or breaking the eccentrics could give a jolt to the flywheel and generator armature, putting an additional exposure on the switchboard, which was in line with these objects.
7. We realized that if the grease buttons were made stationary the danger would be eliminated.
8. How could they be made stationary?
9. It could be done if the connection could be made flexible.
10. It could—and was done.

Consideration should therefore always be given that a minimum of men and machines are exposed.

Guards of unusual design or machines that are difficult to guard are evaluated by our Guard Design Department, which specializes in such problems and has done considerable research work along these lines.

Last year, for example, a vacuum system was developed for threading paper through feed rolls of a paper machine, a design which was proven most effective and safe. Recently in a large supermarket a package belt conveyor was used. It was found that a serious pinch point existed between the belt and the idler rollers at the end of the belt travel. Two conveyor idler rollers, next to the belt, were provided with half bearings. If a hand should get caught the two rollers would pop out.

To prevent a package getting caught if the roller had been removed, an electric trip contact was installed at the end of the nearest roller. If the rollers popped out, the current would be shut off, stopping the conveyor.

In another store children had a habit of riding on the conveyor. An electric eye was installed, high enough to let packages go through but low enough so that a child would interrupt the beam and shut off the power. The conveyor was also so arranged that the power circuit had to be manually reset.

Manufacturers and city and state departments, together with insurance companies and guard manufacturers, all work with the same objective in mind—to make machines and processes as safe as possible for operators, other workers and property. Great progress has been made and further improvements are anticipated. Through education and instruction, workers are made conscious of the fact that they will benefit from good guarding by being able to maintain their earning power. Plant owners will realize that good guarding means uninterrupted production. Finally, machine and guard manufacturers become convinced that well-guarded machinery means good advertisement of their products.

Nuclear Standards Board Elects Officers

MOREHEAD PATTERSON, president, American Machine and Foundry Company, New York, was elected chairman of the Nuclear Standards Board of the American Standards Association at its first meeting on September 18 at ASA offices.

Mr. Patterson served previously as chairman of the Planning Committee for Standards in the Nuclear Field, organized from all parties-at-interest under the auspices of the American Standards Association. The committee studied and made recommendations to the Association concerning the need for standards in various operations of nuclear power in industry.

Henry G. Lamb, in charge of Safety and Highway Standards, American Standards Association, was named secretary of the Board.

The following organizations are members of the Nuclear Standards Board: Aircraft Industries Association of America, Inc.; American Industrial Hygiene Association; American Institute of chanical Engineers; American Institute of Electrical Engineers; American Public Health Association; American Society of Mechanical Engineers; American Society of Safety Engineers; American Society for Testing Materials; Association of Casualty and Surety Companies; Atomic Industrial Forum, Inc.; Bureau of Explosives; Electric Light and Power Group (Association of Edison Electric Institute); Institute of Radio Engineers; International Association of Governmental Labor Officials; Manufacturing Chemists Association, Inc.; National Association of Mutual Casualty Companies; National Electrical Manufacturers Association; National Safety Council; Radio-Electronics-Television Manufacturers Association and the Society of Automotive Engineers.

Also the U. S. Department of Defense; U. S. Department of Health, Education and Welfare; U. S. Department of Labor; U. S. Department of Commerce — National Bureau of Standards and the U. S. Atomic Energy Commission.

At this meeting it was voted that the following organizations also be invited to have representation on the Nuclear Standards Board; American Federation of Labor and Congress of Industrial Organizations; American Chemical Society; American Nuclear Society; American Society of Civil Engineers; Manufacturers Standardization Society of the Valve and Fittings Industry; Scientific Apparatus Manufacturers Association and the Conference of State and Provincial Health Authorities.

Two farmers were riding down the road. Side by side they sat, both looking worried, and both remaining silent. Finally, one gave a deep sigh.

The other studied him for a moment, and said, "You're telling me!"

TWIN SAVINGS for YOU!

SBS-30 and SBS-60 solve ALL skin cleaning problems . . . are almost

IMPOSSIBLE TO WASTE!

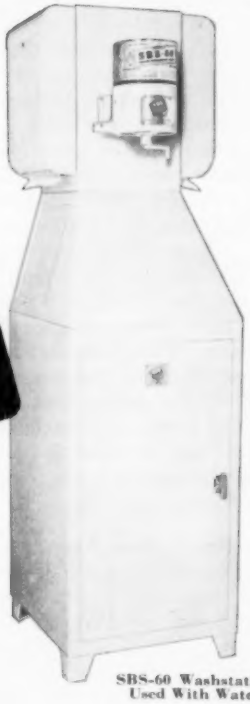
SBS-30 Waterless Washstation
Used Without Water

SBS-30

WATERLESS SKIN CLEANSER

SBS-60

CREAM DEODORANT SOAP



SBS-60 Washstation
Used With Water

PLANT-WIDE SATISFACTION AND SAVINGS ASSURED

Solve your skin cleaning problems *for good* by simply specifying SBS-30 Waterless Skin Cleanser and SBS-60 Cream Deodorant Soap. This combination of two new and modern cream-type skin cleansers will lick most any soil condition—anywhere—to the complete satisfaction of both men and women employees. Both of these dramatic new cleansers adhere to the hands . . . cannot run off like liquid, powdered or wasteful bar soaps. SBS-30 Waterless Skin Cleanser is recommended for the removal of almost "impossible" soils such as tar, paint, glue . . . SBS-60 Cream Deodorant Soap efficiently removes all ordinary soils found in factories, shops and offices. Dispensed from "throw-away" containers, you get savings of 30% . . . 40% . . . up to 50% with SBS-30 and SBS-60—it will pay your organization to get the facts today!

FREE FACTS FOLDER—giving all details . . . answering all your questions . . . explaining specific uses, by industry and plant area —*simply write* Dept. 70.

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the washword of industry

Materials Handling

—*From page 27*

Overhead cranes introduce a new dimension to the safety picture. In addition to watching forward, backward, and on both sides, personnel must keep an eye on overhead movements.

In a steel mill I watched a crane start to move an unstrapped lift of oiled steel sheets. When another crane did not move out of the way fast enough the loaded crane was forced to stop suddenly. There was no provision to keep the sheets from sliding out the ends of the lift, and that's exactly what happened.

Sheets literally sprayed out over a wide area before the crane operator could lower the load. The only reason no one was killed was that the accident happened over a stock storage area, rather than over production machines.

Cranes are often used to stack material where it is necessary to store in piles too high and too close together for handling by any other means. If storage stacks are planned improperly, crane operators may be forced to make lifts when they cannot see what they are doing. When this happens, the hooker or crane follower is responsible for seeing that no one is behind or near the stacks. If the hooker does not fulfill this responsibility conscientiously, another hazard is created.

Overhead conveyors are another feature of many production areas. In most cases adequate guards are provided for such equipment in all areas except at loading and unloading stations. Of course more people are concentrated at these stations than at any other point along the conveyor length. It is not possible, ordinarily, to surround conveyors at loading stations with pierced or solid metal guards, since these would prevent clear access to the work-in-process being moved. However, extreme care should be taken to prevent men from being exposed to injury. Another basic requisite is a stop switch in an easily accessible position at each such station, in case materials or men become tangled with the line.

Aisles. A third feature found in many plants is combined personnel and materials handling aisles. In some cases, I have seen the only personnel access to the plant utilize the same aisle which also carries much of the fork truck traffic through production. The usual explanation for such a condition is that plant space is too valuable to separate pedestrian and vehicular traffic.

However, these same plants often have "dead" areas around the walls required by fire underwriters, or left free because overhead cranes cannot service them. Such spaces are ideal for personnel aisles, because the hazards are substantially reduced. In other plants, it is possible to keep all persons not employed in a production department out of the area entirely. The safety record of companies which run regular tours for sightseers through their plants demonstrates that this hazard can be licked.

In many plants, particularly older ones, new production machines are added wherever room can be found. Even though the original layout provides enough space, after a few years machines are crowded together like sardines in a can. When machines in such an area must be supplied with work, or when completed work must be removed, operators often are endangered. This condition becomes worse in noisy areas such as punch press departments, where machine operators may not even be aware that fork lift trucks or cranes are close to them.

Another common affliction of older plants, also caused by crowding, is provision of inadequate storage banks. With not enough space to store materials near the machines which require them, materials handlers are forced into dangerous practices, such as excessively high stacking or lifting two pallets at a time. The more economic conditions improve, the more machines are crowded into each department, and the less storage space. And each new machine adds at least one more operator to be subjected to the increasing hazard.

In the finished goods warehouse and shipping areas, we might feel that the danger to personnel is somewhat less. The sight of all of those neat piles of products arranged in ordered rows is reassuring. Yet here, too, severe hazards exist.

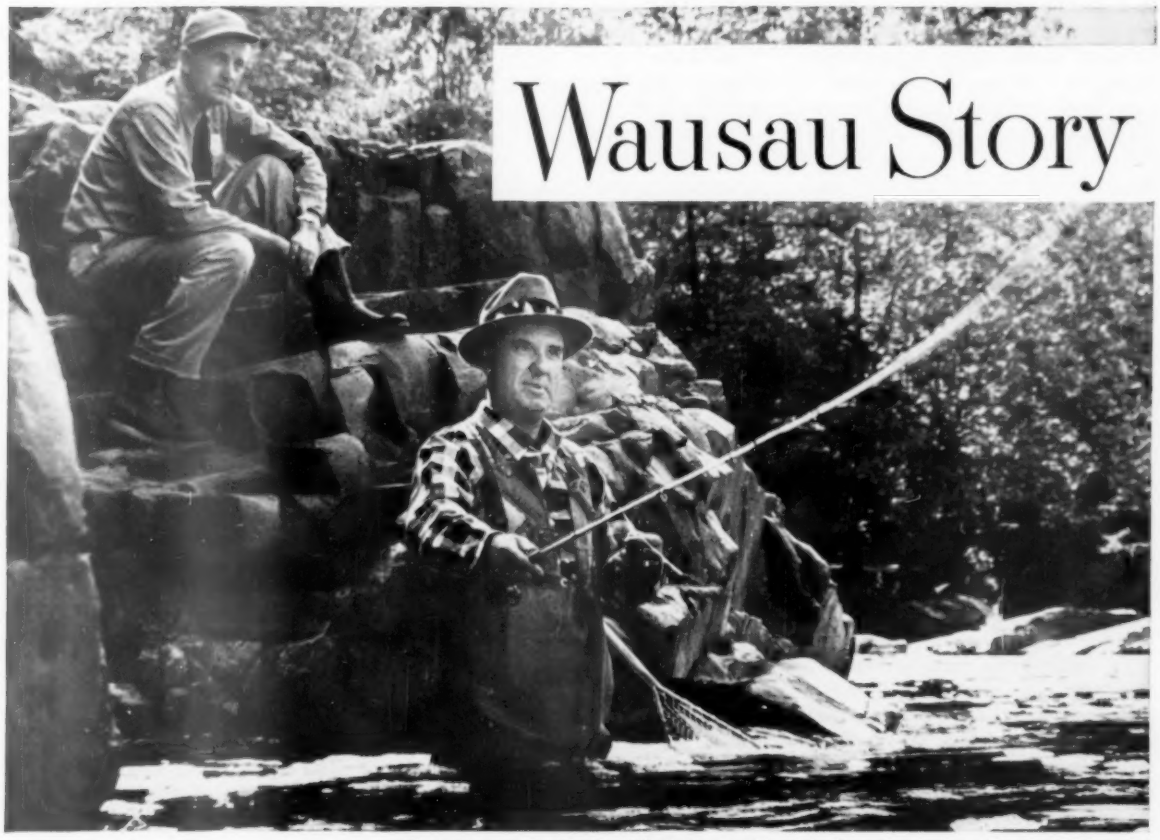
The first of these is the stacks themselves. Package designers seldom consider what we call "handleability" and "stackability" when designing containers. They feel their job is done when the product is protected, and the package is plastered with advertising. Yet, it is often comparatively simple to design a case so that one man can pick it up fairly easily—rather than giving two men an awkward and unsafe task.

Containers are not designed for proper stacking on pallets. To pile properly on pallets, a case should be at least 1.5 times as long as it is wide, and the height should not be greater than the width. Yet, a few hours spent in a truck or Railway Express terminal examining freight will convince you that the percentage of packages properly designed as handling and storing units is relatively small.

Even if the packages themselves are adapted for storage, the stacks may represent an unsafe condition. The rule of thumb that products should not be stacked on a pallet

"No wonder he drives like one—he is!"

Wausau Story



State Conservation Warden Bill Rollman guides John Cornelius to choice Wausau fishing spot.

American Heritage Foundation President discovers spirit behind Wausau's drive for 100% voter registration

by JOHN C. CORNELIUS

"THEY tell us when we're in Rome we should 'do as the Romans do.' So when I visited Wausau, I was out fishing in less time than it takes to say 'Register and Vote!'

"Actually, that's what I'd come to Wausau to say. The American Heritage Foundation is out to persuade all Americans that the way to safeguard our freedoms is by participation in the affairs of our nation. That means registering, informing yourself, and voting.

"I found Wausau people were well aware of that. They were out to get 100% of the eligible voters registered before the November elections. That would make Wausau the 'votingest' city in America. I won't be a bit surprised to hear they've accomplished their goal.

"I'll tell you why I say that. Wausau people are blessed by the greatest natural treasures anyone can find anywhere...lakes and streams and wooded lands. They draw deeply from these treasures to build a good way of life.

"I've heard these people are 'good people to do business with.' They're 'good people to go along with' on their march to the polls."

Here's the Wausau Way of going after the vote 100%

I WILL VOTE

- *A real all-group effort—civic, youth, labor, church, school, business and fraternal.*
- *A door-to-door canvass of every block and every house in Wausau.*
- *Signs, posters, tags, announcements —reminders everywhere to get people to register and vote.*
- *Whatever is needed to get people to register is provided... everything from transportation to baby sitters.*

Girl Scouters Celeste Duckworth and Marjorie Goldberg pin a "vote" tag on Mr. Cornelius.

Along with everyone in Wausau, Employers Mutuals thanks Mr. Cornelius. We're proud of this Wausau Way of working together. It's the spirit behind our insurance business, too. *Workmen's Compensation* is one of our major lines, but we write all types of casualty insurance. Phone our nearest office or write us at Wausau, Wisconsin.

Employers Mutuals *of* Wausau

"Good people to do business with"

to a height greater than the longest dimension of the pallet is often broken. Even oftener, you find loaded warehouse pallets stacked five high. Ordinary corrugated containers will not stand the strain of such high stacks for a long period. I have seen high stacks which have leaned over so far that it was extremely dangerous to remove the top pallet. Stacks at the intersection of two narrow aisles are bumped by materials handling equipment, sometimes causing cases to tumble.

Today's demand for more and more production often results in squeezing finished goods storage into smaller areas poorly designed for the purpose. Supervisors must operate with extremely narrow aisles. When a warehouse is busy and aisles are narrow, every corner could be the scene of a traffic accident.

In addition to fork lift trucks, tractors, etc., warehouses utilize order pickers, packers, stock clerks, and inventory takers. They must use the same aisles, and sometimes work in the same stacks, as the powered handling equipment.

Bins and shelves are often improperly planned. In one recent instance, we found bin stacks 12 ft. high. Pickers were expected to use the stacks themselves as a ladder, swarm up the stack, hold on with one hand, reach into a bin, pull out boxes weighing up to 15 lbs., grip the containers in one arm against their bodies, and climb down again. This was not an occasional demand to remove reserve stock—this was a regular part of the job.

Even where such an extreme condition does not exist, picking orders in bin areas can be hazardous. Stock is often stored by catalog number or other system which does not take into account its physical nature. Pickers are required to remove heavy items from bins at above shoulder height. Ladders are often rickety and there are seldom enough of them. Aisles are usually narrow and light is poor, compounding the problem.

The shipping dock usually presents the same picture as receiving. In many cases, they may both be in the same area, which increases the hazard.

However, there is one unique feature about shipping: the dangers caused by improper loading of outgoing trucks and cars. You may have heard of wrecks and derailments resulting from loads shifting on open cars and snagging the sides of trains moving in the opposite direction. Shifting loads in boxcars also cause trouble, even though improper loading practices usually only crush the containers in them. However, I have seen boxcars whose ends were buckled by the force of improperly anchored loads slamming into them during quick stops.

It is true that railroads maintain inspectors and promulgate carloading regulations to minimize such hazards. But the railroads cannot do this job by themselves. They need the cooperation of every carload shipper to prevent accidents.

With truck shipments the problem is much worse. Many of you have, no doubt, followed trucks on the highways and seen cases fall out into the road because they were improperly secured. Sometimes loads are so top heavy that trucks will skid and overturn when a properly loaded vehicle would suffer no damage.

I saw a tractor-trailer unit loaded with steel at a midwestern mill. All of the approved tiedowns were used, but the unit was overloaded by about 20 per cent. The driver took a back road to avoid a state police weighing station and skidded on a curve at the bottom of a long hill. The truck crashed and the steel broke loose from its moorings and sliced the top of the cab off the tractor. Certainly the accident was the fault of the truck driver, but how much did the shipping foreman contribute by overloading the vehicle?

"Of course you're familiar with the salvage laws . . ."

Even a brief review of hazards existing in receiving, handling, storing and shipping leads to the conviction that these areas are the most dangerous in any industrial operation. Yet many companies pay far more attention to providing guards on production machinery than they do to the safety aspects of all of these functions. We find confirmation of this in our reports to our clients. Time after time, we recommend correction of obviously hazardous conditions in these departments which have existed for so long that supervisors do not even recognize them. We incorporate proper safety provisions in every recommendation. But we realize that this is not enough.

The only way unsafe conditions can be kept to a minimum in any plant is by planning a long-term program, and unrelenting attention in carrying it out. The safety engineer should lay out a proper plan and every supervisor and worker in the plant should make safety a definite requirement of his work.

There is nothing new or unique in a proper safety program for receiving, handling, storing and shipping. Nobody, to my knowledge, has come up with a gimmick to ensure that a program will be carried out. The main ingredients here, as in any other area, are proper planning, immediate improvements, education, training, supervision, facilities, equipment, and equipment maintenance. Each of these items are interwoven with the work of other engineers, production supervision and top management. The following suggestions are made for your consideration in setting up and carrying out such a program.

First, examine each area. Spend enough time in each operation to learn what every man does, how he does it, and why he does it. Secure any procedural manuals which your plant has on any

WORKING TOGETHER TO BRING PEOPLE TOGETHER

For many a year, the Bell seal has been the signpost of telephone service. A little while ago we got to thinking that such a well-known symbol deserved a slogan.

We found six words that seem to sum up the story of the telephone and the telephone business . . . "Working Together to Bring People Together."

"Working Together" describes the spirit and co-operation of the telephone companies and the thousands of telephone men and women who help to provide the service.

"To Bring People Together" describes the greatest use of the telephone.

It is priceless in emergencies and indispensable in saving steps and time and getting things done. And one of its biggest values is in helping people keep in touch with each other.

Many a day is brightened just because someone reached for the telephone to exchange news and good wishes and a friendly greeting.

Isn't there someone you'd like to call right now?

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TUNE IN "TELEPHONE TIME"...The TV program with John Nesbitt's real life stories the whole family can enjoy together...Every Sunday over CBS...See your local newspaper for time and channel.

The Accident did NOT happen

thanks to A.W. ALGRIP

World's only abrasive rolled-steel floor plate

No production slow-up or excess overtime, either—because ALGRIP's thousands of tiny abrasive friction particles prevented slipping.

Nationwide, ALGRIP—made by a patented process—is cutting accident rates, slashing insurance costs. This easily fabricated, super-safe flooring is tough steel into which a grinding wheel type abrasive has been rolled—*not coated*—to uniform depth as an integral part of the steel. Hard usage merely exposes more abrasive for extra long life.

Make a test installation of ALGRIP in your *worst* slipping area—use it as an overlay or as complete flooring. It will pay for itself as you watch accident rates tumble and morale improve. Call or write today for detailed booklet.

A.W. ALGRIP ABRASIVE ROLLED STEEL FLOOR PLATE

ALGRIP—*approved for safety by Underwriters' Laboratories*

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Conshohocken, Pa.

Please send A.W. ALGRIP Booklet AL-26

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handling operations. Study them and compare the written instructions they contain with actual practice. Note each operation, method, procedure, and practice which needs attention.

Next, find out all you can about management's plans for the departments concerned. Make arrangements to examine any proposals for facility expansions and improvements before they are approved.

Then develop your plan. Include provisions for improving bad spots which now exist and eliminating any defects in proposed changes. Secure the help and cooperation of operating supervisors, particularly foremen, by discussing your plans with them and incorporating as many of their suggestions as possible.

At this stage, the plan should be put on paper. If management is sufficiently safety conscious, the plan should be submitted for approval. I have heard of many such programs which have been approved after an accident has occurred involving compensation claims. Certainly, if you can tie safety and savings together, you will have little trouble.

To kick the program off successfully, the next step is to make immediate improvements. When you begin to show results in this area, management and men will become more interested. Interest can be generated by "before and after" pictures, articles in the plant paper, and news releases on bulletin boards.

However, it is important to make certain that your proposals are really improvements. Here is where the value of your study of operations is proved. Also, here is where some programs fail.

I recall one case in which we were cooperating with a safety engineer, as we usually do. The operation under discussion involved moving 55-gal. drums a short distance. Because of low volume and other considerations, we had decided to use two-wheel hand trucks.

The safety engineer asked us to include a bracket on each handle of each truck. This bracket was to be outside the handle, closed at the bottom end, and have an inside opening of 1½ in., so that the

trucker's hand could be protected from injury, especially when tipping or "breaking" a drum back to operating position.

We examined the proposal and found that the truckers wore heavy work gloves which would catch in the guard, and might cause severe injury to hands; that they broke drums by using one hand to tip them back against their trucks and their hands were not at the place where the guards were to be installed; and that the guards constituted a danger to other men working in or near the aisle along which drums were trucked.

The point is not that guards are wrong; they are very much needed in many cases. Rather it is that the engineer who proposed them in this case had not studied the operation thoroughly.

Along with immediate improvements, you can start a program of education. Nothing should be overlooked. To illustrate, in only a very small fraction of the plants where I have worked have the men in receiving, handling, storage, and shipping known how to lift a case—even though they lift cases 250 days a year. Time after time I have watched experienced men bend their backs instead of their legs—strain and heave at something which, by proper methods, they could lift easily. They convert a simple, mechanical act which they have been doing all their lives into a severe hazard. Here is where visual aids and similar material are very valuable.

In conjunction with education, it is necessary to train. The first objective of a training program is to ensure that materials-handling equipment operators are skilled in their jobs. Ample help can be secured by even a small company in setting up an operator training program. Most materials-handling equipment manufacturers have good operator training courses available and will assist you to install them. The armed forces also have excellent training programs which you can obtain.

It should be emphasized that operators of powered equipment are running vehicles which are at least as hazardous as over-the-road trucks. In many cases, skills required of a fork lift truck op-

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THERMAL SAFETY SWITCH Protects Motor!

New NON-CLOG FILTER Saves Labor!

EXPLOSION PROOF

Every detail in Hild's new line of explosion proof equipment is designed and built to the very highest safety requirements. These machines offer you the greatest operating safety, convenience, and economy.

NEW THERMAL SAFETY SWITCH! Important safety feature offered for the first time on any explosion proof vacuum . . . gives you complete protection against circuit overload and motor burnout.

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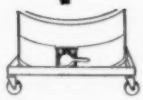
NEW 30 AND 55 GALLON MODELS! The addition of 30 and 55 gallon vacuums gives Hild the most complete line of portable explosion proof vacuums in the industry. These new models are designed for large volume or bulk cleaning . . . they eliminate constant emptying necessary with small tanks.

NEW DRAIN VALVE! Hilds new 30 and 55 gallon explosion proof drums have a handy dump valve for rapid draining of liquid material . . . no lifting necessary.

MODEL 355



NEW TRANSFERABLE HEAD! Vacuum unit with adapter ring can be used on Hild's 10, 15, 30, and 55 gallon listed drums. You can use the right size and number of drums for every cleaning job . . . fill as many 55 gallon drums as the job requires. Excellent for transfering liquid or storing waste for pickup.

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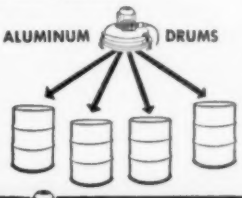

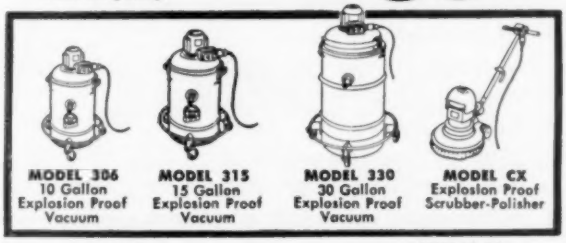

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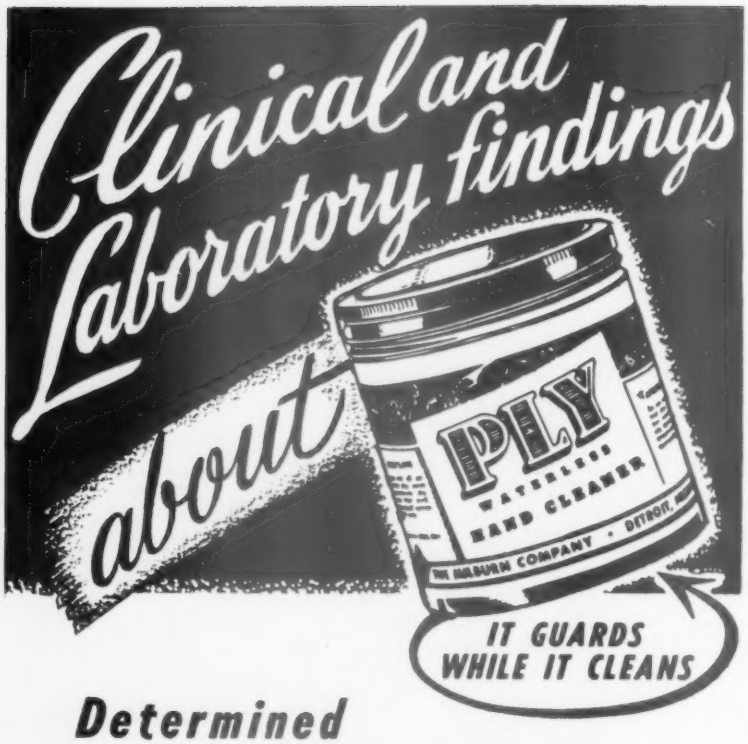

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   a. Leaves hands clean and soft.
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4. No evidence of medical contra-indication over 90 day period in large group tests.
5. Effect of ph on skin—
   Average normal ph recovery. Time—15 Min.
6. Very slight defatting of skin.
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   Washed eye—no effect.
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8. Microscopic condition of hands after 90 day usage—Decrease in scaling.
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erator are equivalent to those of a downtown delivery driver in a large city. The personnel department's assistance should be requested to provide physical checkups, depth perception and reaction time tests, and mental stability evaluations for handling equipment operators—just as they do for men applying to drive company trucks.

Now we have an operator training program, a test course, and men who are physically and mentally suitable for operator jobs. After men have taken the entire program, they should be tested by both written tests on safety rules, maintenance practices, etc., and requiring minimum performance in negotiating obstacle courses. When they pass, they should be issued a license to operate the equipment for which they have qualified. Proper notations should be made in their personnel folders.

An operator's license may look like sheer window dressing. However, the military has used this system for years with success. Operators are proud of the distinction, and do their best to earn and keep it. The card provides an easy way for supervisors to check up on whether an operator is qualified.

There is another practical advantage to this system. If your labor contract provides for bidding on jobs by seniority, as many of them do, you will find it impossible to keep out unqualified operators without it. Formal training and licensing of operators provides a solid basis for securing the agreement of the union on

"You're a registered nurse? Golly, you don't look old enough to vote!"

modifying the seniority system for these jobs. Union officials are even more likely to agree when the hazards produced by unqualified operators are discussed with them.

Another useful tie-in with this system is suspension or cancellation of licenses when supervisors observe unsafe practices. A point system, similar to that used by New Jersey and Connecticut for drivers, can be developed for each type of powered materials-handling equipment. Again, the union should be consulted and should agree with the entire procedure. Once it is accepted, production supervisors and personnel can discipline unsafe operators without causing a grievance.

It is also sensible to educate pedestrians. We have all learned to be careful crossing the street, but when we are in a plant we blithely walk through it as if there is no danger at all. Men walk under the hooks of overhead cranes, stand adjacent to storage stacks when fork lift trucks are making high lifts, cross in front of tractor-trailer trains, all with the sublime confidence that equipment operators will watch out for them.

The next step is to see that foremen enforce proper safety practices on the job. The equipment operator licensing system contains a valuable key to proper supervision for safety: the establishment, publication, and enforcement of rules. A shop foreman is a busy man; everyone makes demands on him. If you provided him and his men with a simple list of "do's" and "dont's" he can enforce it.

Facilities, too, need attention. These points should be provided for:

1. Mirrors at aisle intersections.
2. Aisle lines and aisles that are kept clear.
3. Proper light in both production and materials-handling areas.
4. Guards around building columns and similar obstructions.
5. Proper ventilation where gasoline-powered equipment is used.

Equipment maintenance should be a feature of the handling safety program. Each handling activity should be provided with the right equipment, of the right capacity, with the right accessories, and in the right quantities to do its job.

—Turn page

Protect your workers

CUT YOUR GLOVE COSTS with Jomac Hand Guards

Here's rugged, common-sense protection for your workers, real economy for you. Jomac Hand Guards armor bare hands, stretch glove life when worn over gloves. Widely used in the automotive field, they're practical in scores of industries—for handling raw materials, parts, finished goods, castings, forgings, sheet steel and sheet metal assemblies. Interchangeable—can be worn on either hand—are made of durable, springy 32 oz. Jomac Cloth. They offer clear-cut *proof that quality means economy.*

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Jomac manufactures all types of hand and forearm protection—all made from famous loop-pile Jomac Cloth.

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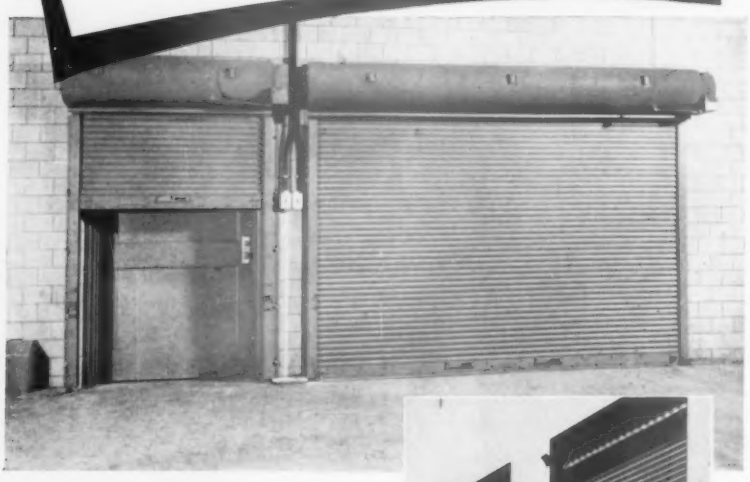
"AKBAR"

The Kinnear Steel Rolling Fire Door with

EXTRA SAFETY Features



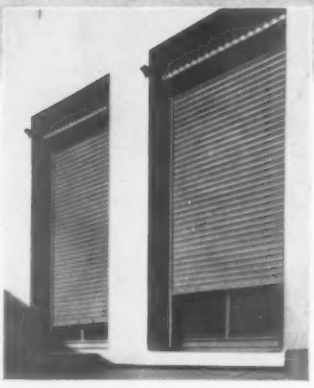
Akbar Fire Doors — another famous Kinnear product — combine quick, positive, automatic fire protection with features that provide maximum safety.

When fire threatens, the doors are automatically pushed downward by a strong starting spring . . . yet their downward speed is controlled, for the safety of anyone passing through the opening at the time of emergency release.

As another safety measure, Akbar Doors feature *separate* counterbalance and starting springs. For emergency exit, the doors can be opened *after* automatic closure.

Another Kinnear device stops the door at sill level *even if the sill is burned away.* This assures maximum closure of the doorway area, even under adverse conditions.

When not in use, Akbar Doors remain coiled overhead, out of the way. Approved and labeled by Underwriters' Laboratories, Inc., they have saved as much as one third of their cost *per year* in reduced insurance rates. They are built any size, to fit each specific opening — for either old or new buildings.



Akbar Doors can also be used for regular daily service, with Kinnear Motor Operators for electric push-button control if desired. Where maximum fire protection is not essential, *nonlabeled* Kinnear Steel Rolling Doors are recommended. Write today for catalog or specific information.

The KINNEAR Mfg. Co.

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SAVING WAYS in DOORWAYS

KINNEAR ROLLING DOORS

And just as important is proper maintenance.

Your plant engineer can, with the help of equipment suppliers, work out a program of preventive maintenance with provision for regular checks of all operating units, adequate periodic lubrication, and repairs or replacements of defective parts. It should feature the use of simple check lists to guide the mechanic in inspecting and maintaining equipment. Manufacturers have trained mechanics available who will teach your own men how to maintain their equipment. Help can be also obtained from government publications.

Some companies, particularly smaller ones, secure the benefits of proper periodic maintenance without involving their limited maintenance crews by contracting with an outside agency. Some equipment manufacturers will provide this service, or it may be done by commercial garages. However, it is well to be cautious about using a garage. Just because a fork lift truck has four wheels and an engine, there is no reason to believe that it presents the same maintenance problem as a small road delivery truck.

Automobile mechanics ordinarily are not trained to maintain the complicated hydraulic system, masts and other distinguishing features of a fork lift truck. If they have not been trained properly, your company may end up paying for work that it does not receive.

In several cases, we have found that fork lift trucks were so poorly maintained as to be a hazard, even though the cost was higher than if they had used their own mechanics. This is true even oftener in the case of cranes and other electrically powered equipment. There are few or no parallels for these machines in the automotive field, and mechanics must have special training and tools to work on them properly.

Fire Losses Reach Peak In 1955

THIS COUNTRY'S fire losses reached their highest total last year.

The record 1955 dollar loss total

of $1,140,768,000 was an increase of $124,000,000 over the previous year's fire losses, the National Fire Protection Association reported in its annual classification of United States fire and fire losses.

"Principal factors responsible for the increase," according to the Association's study which appears in its October *Quarterly* journal, are "the $31 million increase in the 'large loss fire' losses (those fires of $250,000 or more loss each), the $28½ million increase in forest fire losses and the $20 million increase in aircraft losses.

The NFPA compiles annual estimates of the nation's fire and fire losses on the basis of reports from federal, state, and local fire authorities as well as from industrial and other sources.

There were an estimated total of 1,997,950 fires of all types in the U. S. last year, the NFPA report stated. This total broke down to 811,800 building fires which caused $943,551,000 damage.

"An additional 1,166,150 fires," the study added, "not involving buildings — aircraft, motor vehicles, forest, ships, rubbish, grass fires, etc.—accounted for an estimated $197,217,000."

The NFPA said that the 1955 total of building fires is a 4.8 per cent increase over the 1954 total, and the dollar loss of such fires is up 7.8 per cent over the previous year.

The leading causes of fires last year in buildings according to the Association's estimates are: careless smoking and matches—122,000 fires; defective or overheated heating and cooking equipment—100,500 fires; electrical—99,900 fires; rubbish, ignition unknown—59,400 fires; flammable liquids—45,500 fires; lightning—44,800 fires; defective or overheated chimneys and flues—37,500 fires; children and matches—29,900 fires.

The above information is contained in a complete report in greater detail which appears under the title of *"Fire and Fire Losses Classified, 1955"* in the *NFPA Quarterly*, October 1956. Reprints of the study are available from the NFPA Publications Department at 25 cents per copy.

Using inferior materials, he polishes, strips and repolishes in an endless and costly cycle. He exposes his company to liability suits — the result of accidents on slippery floors.

If this man works for you, it's time you put him wise to LEGGE Maintenance. LEGGE shines your floors *without slipperiness.* Your polished surfaces hold up even under heavy abuse because LEGGE Safety Polishes can't be "walked off". Many buildings report slip-accident reductions of up to *98%* plus *big* savings on materials and labor. One famous institution cuts its maintenance budget from $60,000 to $40,000 by adopting the LEGGE System.

Because there is no single cure-all product suitable for every floor, we custom-tailor LEGGE Polishes and Cleaners to your specific needs. For important facts about *your* floors, write today or clip coupon. Walter G. LEGGE Company, Inc., Dept. NS-11, 101 Park Ave., New York 17, N. Y. Branch offices in principal cities. In Toronto—J. W. Turner Co.

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Gentlemen:

( ) I'd like to know what Legge Safety Products can do for my floors. I have approximately _____ sq. ft. of _____ (composition)

( ) Send me your FREE booklet, "Mr. Higby and the Gremlin."

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Firm _____

Street _____

City _____ Zone ____ State ____

PERSONALS

News of people in safety and related activities

Eugene L. Newman

EUGENE L. NEWMAN has been appointed chief of ground safety at Wright-Patterson Air Force Base, Ohio, to replace ERNEST L. HARLAN. Mr. Harlan has assumed the position of chief of ground safety, Central Air Materiel Area Europe, at Chateauroux, France.

For the past two years Mr. Newman has been chief safety engineer of the Air Materiel Force, European Area, at Wiesbaden, Germany. Prior to his European assignment, he was director of ground safety for 18th Air Force at Donaldson Air Force Base, S. C.

In Europe he worked closely with the VDSI (German Association of Safety Engineers), the Royal Society for the Prevention of Accidents in England, and various other governmental safety organizations throughout the continent. He was the United States Air Force representative to the First World Congress on the Prevention of Occupational Accidents held in Rome in 1955. He served as field coordinator in the organization of the Federal Safety Council in Europe and as chairman of the Organization Committee of the European - African-Middle Eastern Society of Safety Engineers.

He is a member of the American Society of Safety Engineers, the Society of American Military Engineers, the German Association of Safety Engineers, the Institution of Industrial Safety Officers of England, the Veterans of Safety, and a past director of the Southern Safety Conference.

RALPH E. HUSTON has been appointed safety engineer at the Maytag Company, Newton, Iowa, succeeding DONALD R. BACHMAN who left the company to become principal of Greene High School, Greene, Iowa.

Mr. Huston, 36, is a graduate of Iowa State College and was employed by the Allied Mutual Cas-

STASAFE WINDSOCKS

LOWER WINTER LINER COSTS

For just pennies per man Windsocks give snug winter warmth. These economical knit caps cost less to buy and less to use. Workers slip on Windsocks, pull them down over ears, put on a hard hat and are off to work. No installation. No adjustments. Nothing to occupy valuable production time. The fit is always perfect since weave expands to all head sizes.

Price is so low, you can throw them away when dirty and still cut costs.

9" length Windsocks $2.64 per dozen
11" length Windsocks $3.00 per dozen

STANDARD SAFETY EQUIPMENT COMPANY
232 WEST ONTARIO STREET CHICAGO 10, ILLINOIS

NEWARK 4, N. J. 597 BROADWAY
CLEVELAND 10, OHIO 855 EAST 152nd ST.
LOS ANGELES 66, CAL. 12921 W. WASHINGTON BLVD.

uality Company of Des Moines. He also served as a safety engineer.

Mr. Huston was a captain in the field artillery from May 1942 to March 1946. He took part in seven major campaigns and was decorated with the Bronze Star and a unit citation which he earned in France.

GEORGE W. HARRIS, NSC staff member from 1936 to 1950, has returned to Council headquarters where he has been appointed

George W. Harris

senior representative in the Field Service Department.

Prior to his return in October, Mr. Harris was a lieutenant colonel in the Army's Military Police Corp. As provost marshal of White Sands Proving Ground, N. M., he was responsible for the physical security of the installation, which is one of the key sites for the testing for guided missiles. At the time of his departure he was presented an Award of Achievement.

Mr. Harris' return to the Council staff ended a six-year tour in the Army which began when he was recalled in 1950.

Mr. Harris joined the Council staff in 1936 as a member of the Public Safety Division. His primary duties at that time were supporting the enactment of standard driver license laws throughout the country. He later became active in the promotion of public education programs on state and local levels.

From the end of World War II

VI-LAN CLEAN

dispensers

on the job and in wash rooms will "inhibit" the menace of

dermatitis

. . . lost man hours and lost profits!

This new antiseptic all-purpose skin cleanser contains ACTAMER, a non-toxic bacteriostat, perfected by Monsanto Chemical Company, exerting a powerful inhibitory action against harmful skin bacteria for 48 hours after use.

VI-LAN CLEAN does what ordinary soaps can not do. It removes greases, oils, paint, acids, graphites, printing inks, asphalt, rubber, gasket cements and other industrial soils and sediments, and provides the prophylaxis inhibiting the germs which too often put employees out of commission.

So, serve and protect your employees with VI-LAN CLEAN—install the new VI-LAN CLEAN dispensers in every wash room and on critical on-the-job locations. MAY BE USED WITH OR WITHOUT WATER.

To fill dispensers VI-LAN CLEAN is packed in polyethylene bags, allowing you to release any amount of the cream simply by finger pressure on the bag without waste. This container also may be used conveniently as a portable dispenser on trucks and outside jobs.

Also available in convenient pint, quart and gallon containers for home and shop use.

Write for descriptive folder today!

DAMERON enterprises, inc.
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Free sample when requested on company stationery.

CUT DOWN NOISE
WITH THE SMR
EARSTOPPER

Soft, comfortable, resilient, the SMR EAR STOPPER adjusts itself to all shapes, turns and movements of the ear canal. Will not slip out of the ear. Has a long life and is reasonable in cost. Furnished in a plastic case. Forty-five cents per set in gross lots.

SURGICAL MECHANICAL RESEARCH INC. SMR
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until 1950 he worked on the Annual Inventory of traffic safety activities, and the Signs of Life program.

A graduate of Indiana University, he is a life member of Sigma Delta Chi, professional journalistic fraternity.

J. WYLIE LUMPKIN has been appointed manager-safety by Railway Express Agency with headquarters in New York. He succeeds J. M. Shanaphy, who retired in October after more than 47 years of service.

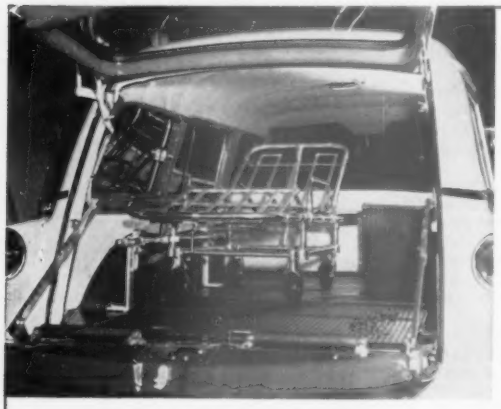
A native of Blundale, Ga., Mr. Lumpkin entered the express business as a driver in Atlanta. Among the posts he has held are route agent at Nashville, safety director at Atlanta and chief clerk to the vice-president, Atlanta.

PHIL STREIT, of NSC's Field Service Department, has been assigned as a field representative covering South Dakota, North Dakota, Iowa, and parts of Wisconsin and Illinois.

WENDELL R. BLAIR, for the past two years staff representative and senior engineer of the Construction Section, National Safety Council, has joined Lively-Blair and Associates, consulting safety engineers to the construction industry. He is in partnership with THOMAS M. LIVELY, consulting safety engineer, of Minneapolis, Minn.

Wendell R. Blair

Mr. Blair will represent the firm in the East with offices at 51 E. 42nd St., New York, while Mr. Lively will handle all midwestern and far west operations from the main office in Minneapolis.



WASHINGTON

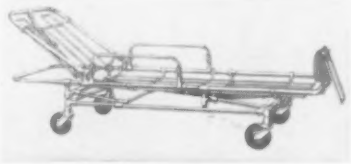
STATION WAGON CONVERSION COT AND STRETCHER KITS

Washington full senior size Kontour-Kot with 5" cushion tires, in a Ford country sedan.

WASHINGTON MAKES A COMPLETE LINE of station wagon conversion cot and stretcher kits—with models available to fit any make or model wagon. Installation is simple, and removal is quickly accomplished in a few minutes—leaving the wagon floor clear. Washington cots and stretchers are the first choice for any emergency vehicle, as well as the favorite for emergency rooms, industrial first aid stations and plant hospitals. If you are in doubt as to the proper kit, write us giving the type and model of station wagon, and we will advise you of the most suitable model, with prices.

WASHINGTON MAKES COTS AND STRETCHERS TO FIT ANY VEHICLE, OR FOR ANY FIRST AID ROOM OR HOSPITAL REQUIREMENT

Washington's COMPLETE LINE of ambulance cots and stretchers and other emergency equipment can meet your every requirement. For over 32 years, Washington has constantly featured the highest quality and best craftsmanship in the industry. First aid and rescue squads, fire departments, hospitals, factory hospital and first aid rooms are but a few of the thousands of satisfied users of Washington products.



Two-level elevating ambulance cot, Model 52—A Washington exclusive design.

Fold-A-Way emergency stretcher, Model 18. Light and compact, folds easily.

WRITE FOR FREE CATALOG

WASHINGTON PRODUCTS CO.

238 SOUTH FAYETTE ST., WASHINGTON C. H., OHIO

Obituary

ARTHUR C. CARRUTHERS

ARTHUR C. CARRUTHERS, former publisher and editor of *Safety Engineering* (predecessor title of *Safety Maintenance*), died October 3 in Bradenton, Fla., where he had been living in retirement for the past six years. He was 78.

Mr. Carruthers, who came to this country from London where he was graduated from St. George's College, was one of the pioneers of the professional safety movement in the United States.

He served on the organizing committee of the National Safety

Council and through the years maintained his interest in that organization which at one time he served as a branch secretary.

Mr. Carruthers gave expert testimony on safety and fire protection before the Military Affairs Committee, U. S. House of Representatives; delivered many addresses over radio under the sponsorship of the New York State Labor Department, and was the author of numerous articles on accident prevention, fire control, and industrial health conservation. He was a member of the then President Hoover's Street and Highway Safety Committee. He retired in 1948 several years after the sale of the magazine to Alfred M. Best Company, Inc.

Mr. Carruthers is survived by his widow, Marguerite; his son, Lt. Col. Rob Roy Carruthers, and two grandchildren.

15-Year Disaster Toll Is 20,000 Lives

CATASTROPHIC accidents—defined as those in which five or more persons are killed—claimed about 20,000 lives in continental United States during the 15 years from 1941 through 1955, the Metropolitan Life Insurance Company's statisticians report.

The death toll fluctuated from year to year, ranging from a low of about 825 in 1941 to nearly 2,000 in 1947. Tabulations for the first six months of 1956 show that catastrophes took about 700 lives, which is approximately an average half-year figure, the statisticians note.

Breakdown of the 15-year toll as to the type of catastrophe shows conflagrations to have been most costly as to loss of life. These fires occurred in private dwellings, hotels, boarding and rooming houses, institutions of various kinds, and other places, and the number of such fatalities totaled 5,124.

Ranking next in number of fatalities were such natural disasters as tornadoes, hurricanes, and floods, which resulted in 3,941 deaths. Motor vehicle catastrophes were responsible for 3,717 deaths.

The greatest single disaster during the 15 years was the explosion and fire at Texas City, Tex., on April 16 and 17, 1947, in which about 560 lost their lives. Other disasters resulting in more than 150 deaths were:

Night Club fire in Boston, November 28, 1942 492

Explosion of two ammunition ships, Port Chicago, Calif., July 18, 1944. 322

Series of tornadoes in the Mississippi Valley States, March 21-22, 1952. . 229

Hurricane "Diane" and floods in the Northeastern United States, August 17-19, 1955 180

Circus fire in Hartford, Conn., July 6, 1944 168

Tornado in Texas and Oklahoma, April 9, 1947 167

Tornado in Pennsylvania, West Virginia, and Maryland, June 23, 1944 159

AVAILABLE

Safety Supervisor — Particularly interested in overseas assignment. 37 years old, speak Spanish and German. For resume write Box 423, NATIONAL SAFETY NEWS.

sellstrom safequard --of the Month

Model 750

NEW! Metal Frame Safety Goggles

"Squared Shape" for Greater, Safer Vision!

The new 750 series safety goggles of sturdy metal are engineered and manufactured to the lightest optical standards. "Squared" design provides an additional area of coverage and greater visual area. This appealing design gains immediate wearer acceptance everywhere. Lightweight durable construction includes many added built-in features to provide the utmost for safe comfortable vision.

Special Construction Features!

- Sturdy one-piece bridge construction
- Deep grooved high tempered eye wire
- Comfortable rocker type and adjustable nose pads
- Interchangeable temple and end-piece screws
- Permanent adjusting spatula temples—plastic tipped
- Comfortable cable temples—plastic dip coated for longer life

For complete information and prices, send for brochure No. 34 C or request general catalog No. 33 for information on complete line of Sellstrom Safety Goggles, Welding Helmets, Face Shields and Respirators.

Distribution in all major cities.

Sellstrom Manufacturing Co.

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Voice of the Reader

Let's have your views on current topics. You don't have to agree with us

Inside NSC

LA CROSSE, WIS. We enjoy reading NATIONAL SAFETY NEWS and get many good ideas from it. Your September issue has just reached me and on page 76, *Inside NSC*, I read about the Green Cross softball team. Having worn that type of softball uniform several times I wish you would remind center fielder Dick Sipes to button the ankle strap on the pants cuff before he has an "accident" and gets his spikes caught in the flap and allows a couple of runs to score. That would be poor publicity for the Safety Council.

Could find absolutely nothing wrong with "Miss Green Cross."

—KEN D. FRANK, *Roundhouse Clerk*
The Milwaukee Road.

Too Many Statistics?

ORLEANS, FRANCE. It is my candid opinion that complex statistical theories and related "techniques," as presented by Messrs. Mathewson and Brenner in the August issue (Journal of the American Society of Safety Engineers), are of no use whatsoever to the practising safety engineer.

Accident statistics must be clear, concise, pertinent, and simple to explain, or the safety engineer had best not try to use them to influence people with whom he works. The more time he spends sitting at a desk playing around with figures —other than calculating and comparing frequency and severity rates, the less time he will have to spend where it will do the most good: outside of his office, in the plant or field, promoting, educating, inspecting, and investigating. The main thing—whether in or out of his office—is meeting people, seeing what is being done and how it's being done, and talking sense—not nonsense.

The section, "Effect of Exposure and Interpretation," with its impressive multisyllabic jargon concerning variations in frequency rates of small companies with low exposure, is mere twaddle. Any boob who has had eighth grade arithmetic can easily understand this "phenomenon." And he doesn't need algebra to figure out that a graph of cumulative accident experience will generally indicate the trend, while a large enough segment of past experience will usually constitute sufficient proof of a bad situation.

As to using the system advocated for "interpretation of zero frequency rates," or any other method to determine "accident likelihood" by juggling statistics—well, why don't they sell that idea to the insurance carriers? I strongly suspect the latter will prefer relying on the eyes, ears, knowledge, experience, and judgment of their engineers in the field!

I was really wowed by that last bit, "Conclusions," beginning with this high-sounding sentence: "The

SAFETY HAT • CAP with full-floating HEADGEAR . . . adjustable sizes 6½ to 8

Molded from a flame retardant, waterproof material in seven different brilliant, permanent colors—red, yellow, blue, white, grey, green, brown—"SUPERGARD" exceeds all Government Specs. for impact, penetration, electrical resistance, flammability, etc. . . . In various adjustments, each change is positive and secure. Cool and well ventilated, for wearing in the sun—"SUPERGARD" is also supplied with a half-liner for frosty weather and a full-liner for frigid temperatures. There is no metal of any kind in its construction. . . . Easily sterilized, there is nothing that need be replaced in "SUPERGARD", when reissued, but the wrinkle-free sweatband, which comes in leather or leatherette . . . "SUPERGARD" is also available with goggles; faceshield; welding helmet; half or full liners for cool and cold weather. . . . ***Send for completely descriptive catalog pages and prices.***

The BOYER-CAMPBELL Company

6548 St. Antoine *Safety Division* DETROIT 2, Mich.

safety engineering profession is constantly confronted by the problem of having to decide whether or not there has been some change in accident likelihood." It may be necessary to dress up our work to make it look respectable to outsiders, but let's not talk like stuffed shirts to each other in our own trade magazines!

I believe efforts to make accident statistics an exact science are worse than useless: they are pretentious bosh. Furthermore, I think our efforts to achieve professional status are not aided by propagating hokum. This is the sort of malarky that would appeal to Bill Andrews' neat gentleman, described in his "Diary of a Safety Engineer" printed in your issue.

Brains are helpful in almost any walk of life. But brains that busily buzz to grind up details into decimal points should be nominated to serve on Thorstein Veblen's "Committees for the Sifting of Sawdust!"

—RICHARD D. SMITH

Rose Fences Tested On Expressways

THE HEDGE of multiflora roses which will keep a bull in the pasture will also stop a car that runs off the highway.

Tests with cars going 30 miles an hour have resulted in no injury to passengers and only minor scratches on the car finish. It is estimated that contact at speeds up to 50 miles an hour could be tolerated.

Multiflora roses are extremely sturdy and grow in ordinary soil with little attention. They recover quickly when crushed or even burned over.

A 6-mile planting by the Highway Department of Cook County, Illinois, required 31,470 bushes set 3 ft. apart in 3 staggered rows. When fully grown, numerous branches interlace, shrubs form a dense mass approximately 12 ft. deep. This type of rose attains a height of 8 ft. but can be kept trimmed to 6 ft. or less.

Other advantages claimed for this type of hedge included:

When fully grown, six feet in height, the bushes will reduce headlight glare from opposing traffic. They will serve as snow fences and traffic noises will be reduced. The hedge will eliminate the need of barrier cables now installed in expressway medians to prevent U turns. Blooming all summer long, the bushes will add beauty to the parklike rights of way.

Some disadvantages are also anticipated. Highway authorities are afraid that the bushes will also bloom with cleaning tissue and other scraps tossed from passing cars. As it is, the state removes eight truck loads of paper from Edens Expressway every week.

A 'MUST' FOR EVERY LOADING RACK

the Gilbarco Electronic Indicating Ground

For positive protection against static electricity, no loading rack should be without the Gilbarco Electronic Indicating Ground. It provides a safe ground plus sure indication that the ground connection is completed and operative.

It is low cost insurance against the hazard of static electricity at Bulk Plants, Chemical Terminals, Tank Farms, Marine Terminals — wherever there is loading and unloading of volatile liquids.

It's safe — eliminates the ever present source of danger at all loading racks — faulty grounds which lead to fire.

It's simple — when proper ground is established Indicator gives "go ahead" by means of light or audible signal.

It's positive — here is the one way to be sure that some wiring defect, paint, rust or carelessness is not causing a faulty ground.

WRITE NOW FOR FULL DETAILS— learn how little it costs to have this POSITIVE protection and safety for your loading racks. It is low-cost insurance.

Gilbarco

Gilbert & Barker Manufacturing Co.
West Springfield, Mass.
Toronto, Canada

COMING EVENTS

in the safety field

Nov. 8-9, Columbia, S. C.
Nineteenth Annual Accident Prevention Conference (Hotel Jefferson). J. D. Watson, Jr., safety engineer, South Carolina Industrial Commission, P. O. Box 539, Columbia, S.C.

Nov. 14, Fort Worth, Tex.
Twelfth Annual Industrial Institute (Hotel Texas). L. W. Graff, safety director, Fort Worth Safety Council, Majestic Bldg., Fort Worth 2, Tex.

Dec. 5, Seattle, Wash.
King County Safety Conference (University of Washington). William A. Feathers, managing director, Seattle-King County Safety Council, 1014 Third Ave., Seattle 4, Wash.

Dec. 10-11, New Orleans
Louisiana Safety Association Conference (Roosevelt Hotel). Charles E. Doerler, secretary, Louisiana Safety Association, P.O. Box 1148, Shreveport, La.

Jan. 17-18, Milwaukee
Mid-Winter Safety Conference and Exposition (Hotel Schroeder). R. W. Gillette, executive secretary-treasurer, Wisconsin Council of Safety, 1 W. Wilson St., Madison 2, Wis.

Feb. 7-8, Los Angeles
Seventh Annual Governor's Industrial Safety Conference (Biltmore Hotel). A. C. Blackman, chief, Division of Industrial Safety, State of California, 965 Mission St., San Francisco 3.

Mar. 3-5, Richmond, Va.
Southern Safety Conference and Exposition (John Marshall Hotel). W. L. Groth, executive director, Southern Safety Conference, Inc., P.O. Box 8927, Richmond, Va.

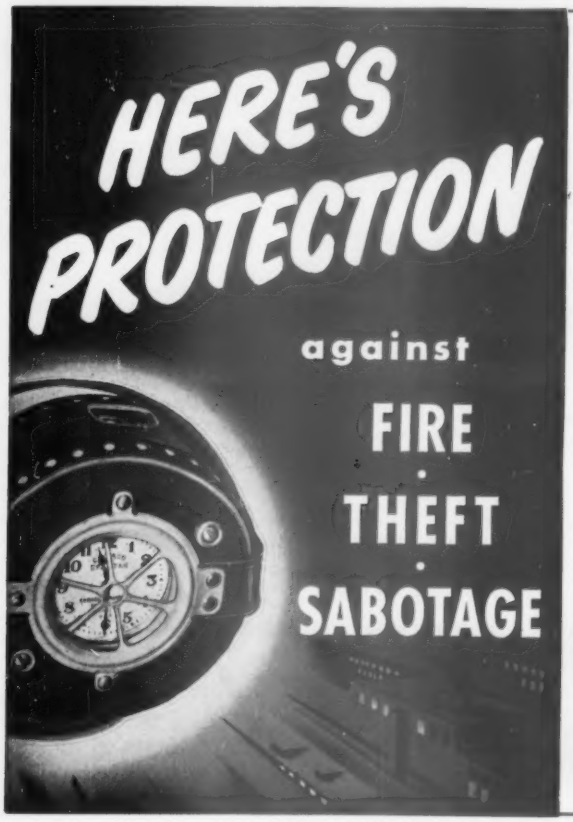
Mar. 13-14, Philadelphia
Twenty-third Annual Regional Safety and Fire Conference and Exhibit (Bellevue-Stratford Hotel). Harry H. Verdier, manager, Philadelphia Safety Council, c/o The Chamber of Commerce of Greater Philadelphia, 121 S. Broad St., Philadelphia.

Mar. 18-22, New York
Twenty-seventh Annual Greater New York Safety Convention and Exposition (Hotel Statler). Paul F. Stricker, executive vice-president, Greater New York Safety Council, 60 E. 42nd St., New York 17.

Mar. 18-19, Boston
Thirty-sixth Annual Massachusetts Safety Conference (Hotel Statler). Bert R. Harmon, director of activities and information, Massachusetts Safety Council, 31 State St., Boston 9.

Mar. 18-20, Los Angeles
Fourth Annual Safety Congress and Exhibits (Ambassador Hotel). Don Perkins, director, public relations, Greater Los Angeles Chapter, NSC, 610 Main St., Los Angeles 14.

Mar. 19-20, Fort Wayne, Ind.
Northeastern Indiana Safety Conference and Exposition. Ivan A. Martin, manager, Safety Council, Chamber of Commerce, Fort Wayne, Ind.



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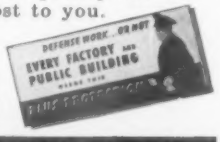
Watchclock System
"The first . . . and still the first."
LOWERS YOUR INSURANCE RATES!

It keeps track of your watchman's tracks—so accurately and positively that the CHICAGO WATCHCLOCK System is approved by THE UNDERWRITERS' LABORATORIES and by THE FACTORY MUTUALS LABORATORIES. Users earn reduced insurance rates. Thus the CHICAGO WATCHCLOCK System quickly returns its small cost to you.

Write for FREE new folder that completely describes this simple, low-cost, tamper-proof system of extra protection to property. Write for it NOW!



CHICAGO WATCHCLOCK
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OFFICES IN PRINCIPAL CITIES

Apr. 3-4, Indianapolis, Ind.

Tenth Central Indiana Safety Conference and Exhibit (Claypool Hotel). Jack E. Gunnell, director, Indianapolis Safety Council, Indianapolis Chamber of Commerce, 320 N. Meridian St., Indianapolis 11, Ind.

Apr. 9-11, Columbus, Ohio

The 27th All Ohio Safety Congress and Exhibit (Deshler Hilton Hotel). A. W. Moon, congress manager, Room 611, Ohio Departments Bldg., Columbus 15, Ohio.

Apr. 11-12, Kansas City, Mo.

Central States Safety Congress (Hotel President). George M. Burns, director, Kansas City Safety Council, 419 Dwight Bldg., Kansas City 5, Mo.

Apr. 29-May 1, Syracuse, N.Y.

Fifth Biennial Central New York Safety Conference and Exposition (Hotel Syracuse). Newell C. Townsend, administrative secretary, 351 S. Warren St., Syracuse 2, N.Y.

May 9-10, Baltimore, Md.

Annual Governor's Safety-Health Conference and Exhibit (Lord Baltimore Hotel). Jospeh A. Haller, executive chairman, Safety Conference, Department of Labor and Industry, State of Maryland, 12 E. Mulberry St., Baltimore 2, Md.

Oct. 21-25, Chicago

Forty-fifth National Safety Congress and Exposition (Conrad Hilton Hotel). R. L. Forney, secretary, National Safety Council, 425 N. Michigan Ave., Chicago 11.

"Mr. Wurple, we need more lights in the parking lot. Last night I tripped over a foreign car."

Du Pont PRO-TEK® keeps irritants from reaching the skin!

Protect workers' hands, save production time with this heavy-duty hand cream developed by Du Pont especially for factory use. Du Pont PRO-TEK shields hands and arms against grease, grime, paint and insoluble cutting oils. Workers simply rub PRO-TEK on before job. Then at wash-up off come grime and irritants along with the PRO-TEK. Even paint washes off in plain water!

PRO-TEK saves job time, maintains efficiency, boosts morale. Order from your supplier, or write E. I. du Pont de Nemours & Co. (Inc.), Wilmington 98, Delaware.

"Invisible gloves" guard hands against:

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• STAINS • PAINT
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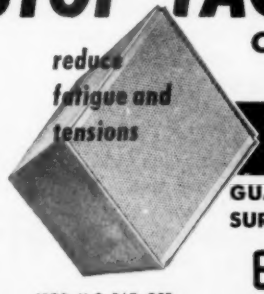
STOP FACTORY NOISE

OVER MOVING MACHINERY...

INCREASE EFFICIENCY WITH



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WHAT'S NEW IN NATIONAL SAFETY COUNCIL SERVICES

Operation Safety

The "Back the Attack on Traffic Accidents" campaign goes into high gear in December as officials, safety and civic organizations, industry, and private citizens pool their efforts in an all-out drive to halt the annual traffic slaughter that has become an unwanted accompaniment to the Christmas holiday season.

The entire community is being galvanized into action. Enforcement is to be stepped up. Safety organizations are primed to conduct the most intensive public education campaign in traffic safety history to rally citizen support. Business and industry are adding their weight to the campaign both on a local and national level.

The December Operation Safety kit, as the vehicle for bringing the "Back the Attack" campaign into the community, has been greatly expanded to include many additional publicity and promotional aids. One addition is a speech outline on "Back the Attack."

The active cooperation of your company is vitally needed to help insure the success of the campaign. Each person receiving NATIONAL SAFETY NEWS has been sent the special issue of *Public Safety* magazine which will serve as the basic workbook for the yearlong campaign.

Tie In With "O-T-J"

Your off-the-job safety program in December should be brought into the main current of "Back the Attack." Your company can also help to alert the community by using some of the educational pieces offered through Operation Safety. One of these is bumper strips, available for both trucks and automobiles. Displayed on car and truck bumpers, each strip will be seen by hundreds of drivers and pedestrians every day.

Gummed stickers are available for business firms, to be used on correspondence, notices, advertising literature, and other mail. Arm bands, buttons, and hang-on tags for bottles and car-door handles can also be put to good use. (For prices see the special issue of *Public Safety* magazine or write to "Back the Attack," National Safety Council, 425 N. Michigan Ave., Chicago 11.)

Nine New Posters

A new "Back the Attack" poster in the "C" and "A" size is also available for use in plant locations. In addition to this general campaign poster, eight more posters have been made up on four major problems—speeding, drinking and driving, prolonged darkness and pedestrian safety.

The posters include these illustrated messages: "Cut Your Speed After Dark," "Watch for Pedestrians," "Night Doubles Traffic Troubles," "Drinking—Driving—Disaster," "Drunk Drivers Go to Jail," "Set your Speed by Driving Conditions," "Can the Driver See You?" (for pedestrians) and "Drinking Drivers get Jailed—Fined—License Suspended—Killed."

An attractively designed leaflet on "Back the Attack" is ready for your distribution to employees or as an envelope stuffer. Other leaflets on the same major themes available this month include *Speed Kills, Slow Down at Sundown, Now's the Time to Say No!* (on drinking and driving), and *Trial in Error* (on chemical tests for intoxicated). Two booklets are also being offered—*You Are an S.P.* (for pedestrians) and *Smart Headwork for Lifesaving Footwork* (a color cartoon booklet for pedestrians).

A new color booklet with lively illustrations and brief text on winter driving facts for passenger car drivers has been published this year. Titled *Quit Your Skiddin'*, the 16-page booklet is a real eye-catcher and does a powerful selling job on winter driving hazards.

Talks for Drivers

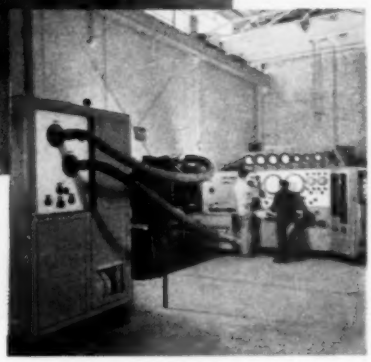
Now driver supervisors can have the same type of helpful five-minute talks that have proved

so popular with plant supervisors. The Council's new *Five-Minute Safety Talks for Driver Supervisors* contains 52 talks, one for each week of the year.

Written by Hallie L. Myers, executive director of the Indiana Traffic Safety Foundation and a veteran in transportation work, the new book is designed for all branches of motor transportation. The talks represent a wealth of facts and ideas about safe driving which can be used in short conferences with drivers, in driver letters and safety bulletins and in driver counseling interviews.

Talks cover such subjects as defensive driving tactics, the six conditions of accidents, physical laws relating to motor vehicle operation, courtesy, job pride, and human quirks behind certain types of traffic behavior.

✳ Look to this page each month for latest news about NSC services. Address request for additional information, samples or prices to the Membership Department.



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aids efficiency in making quality control test equipment

George L. Nankervis Company uses modern system of painting to reduce eye fatigue, and improve morale of workers

PRACTICAL, everyday experience is demonstrating to executives of the George L. Nankervis Company, of Detroit, Michigan, how Pittsburgh COLOR DYNAMICS in their new and vastly enlarged plant, benefits management and workers alike. The bright, cheerful work areas resulting from this system of painting have increased efficiency, improved morale and reduced accident hazards.

• **The Nankervis Company** designs and builds special quality control equipment for the automotive and aircraft industries. Among its products are devices for testing engines, carburetors, fuel metering equipment, steering and braking mechanisms, shock absorbers, transmissions and differentials. It also engineers and installs electro-plating and metal finishing systems.

• **Using the principles** of COLOR DYNAMICS, colors were selected for interior walls and ceilings to improve seeing conditions. Stationary as well as moving parts of machines were painted in colors that relieve eye strain and lessen nervous tension and physical fatigue. Safety colors in hazard areas safeguard workers.

• **We have proved** to our satisfaction that color environment is important to greater plant efficiency and better employee-management relations," comments President George L. Nankervis. "COLOR DYNAMICS has contributed to higher productivity. Our entire work force takes greater pride in the appearance of our new plant. They help to keep it clean and orderly, reducing housekeeping problems. We consider these benefits a desirable and substantial bonus as they cost us no more than conventional maintenance painting."

• **Why not try** COLOR DYNAMICS in your plant—in a department or on a machine or two—and see the difference?

HERE'S HOW TO GET A FREE COLOR PLAN OF YOUR PLANT

• We'll be glad to mail you a free copy of our book on COLOR DYNAMICS in industry. It explains what this painting system is and how to use it. Better still, we'll be glad to prepare a comprehensive color plan of your factory, without obligation. Call your nearest Pittsburgh Plate Glass Company branch and arrange for a representative to see you. Or mail coupon at right.

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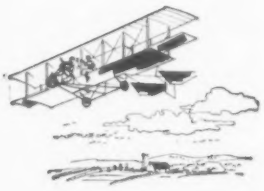
PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

It's actually easy to save—when you buy Series E Savings Bonds through the Payroll Savings Plan. Once you've signed up at your pay office, your saving is done *for you*. The Bonds you receive pay good interest—3% a year, compounded half-yearly when held to maturity. And the longer you hold them, the better your return. Even after maturity, they go on earning 10 years more. So hold on to your Bonds! Join Payroll Savings today—or buy Bonds where you bank.

The bride wore goggles



ON OCTOBER 26, 1912, an ungainly biplane swooped into a Michigan pasture like an overfed duck and promptly nosed over on its back. Its contents proved to be a teen-age couple who got married as soon as they regained consciousness.

This was the world's first aerial elopement.

Art Smith, the groom, happened to have one of the country's few flying machines because he had built it, with his own hands, at age 15. And his parents had mortgaged their home to finance him. Their pride helped carry him through years of failure to soaring success as a famous early stunt flyer.

But he didn't remain a barnstormer long. In 1917 his pioneering skill was needed to train our World War I pilots. Then came America's first air-mail service. And again, Art helped break the way—though it eventually cost him his life.

As American as Tom Swift, Art Smith was the farseeing and confident son of a country that has always produced far more than her share of sure-footed visionaries. That's a good thing to know, especially if you've been putting some money into this country's Savings Bonds.

U. S. Savings Bonds aren't backed by gold or silver alone. They are backed by the character and abilities of 165 million Americans. That's why they're one of the world's greatest investments. Buy them regularly—and hold on to them!

Safe as America—U.S. Savings Bonds

The U. S. Government does not pay for this advertisement. It is donated by this publication in cooperation with the Advertising Council and the Magazine Publishers of America.

For a More Successful Poster Program

POSTER program aids miniatured on this and the following pages are NEW — shown here for the first time. Those illustrated in one color are actually printed in two or more colors.

For maximum variety, refer to the 1956 Directory of Occupational Safety Posters. There you'll find 756 top-notch selections on a great variety of subjects.

Copies of the Directory are available at 50 cents each—write Membership Service, N.S.C.

JUMBO POSTER for JAN. 1957

The Jumbo poster, issued monthly, is designed for outdoor use and is available to members on annual subscription but is not stocked. Its actual size is 9' 11" by 11' 8".

SAFETY BANNER FOR JANUARY, 1957

Here is the attention-getting, monthly cloth banner. Available in two types—indoor and outdoor—both are identical in size (10 feet long by 40 inches high), have the same general message and multi-color design. Indoor type is of sturdy drill with grommets for easy hanging, while the outdoor banner is of extra heavy drill, with wind vents, and has strong stitched-in rope for durability.

in the Pocket!

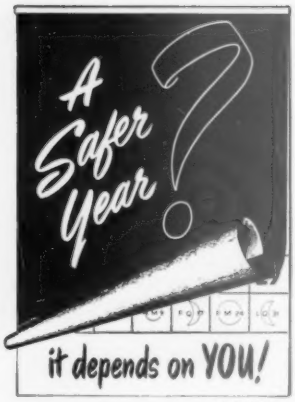
0815-A 8½x11½

This new four color poster is illustrative of the 72 four color posters shown in the 1956 Poster Directory.

Electrotypes of poster miniatures on this page are not available, nor can overprint inserts be supplied.

Posters below are printed in two or more colors

(Available only in sizes indicated)



NATIONAL SAFETY COUNCIL

0958-C 25x38

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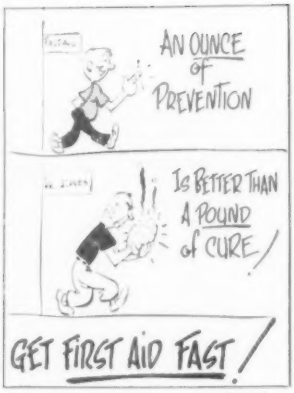

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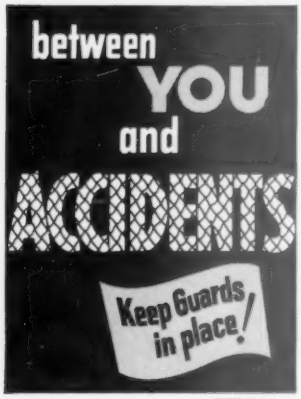

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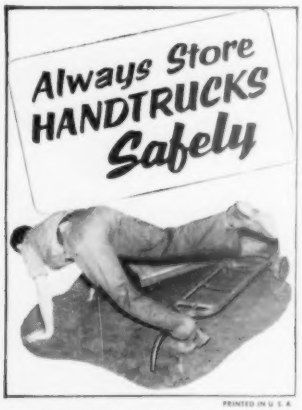

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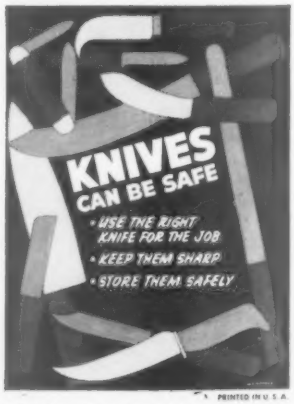

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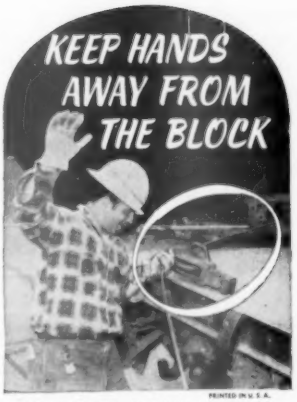

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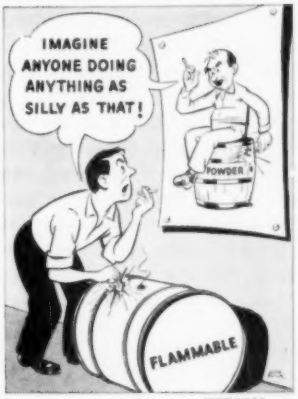

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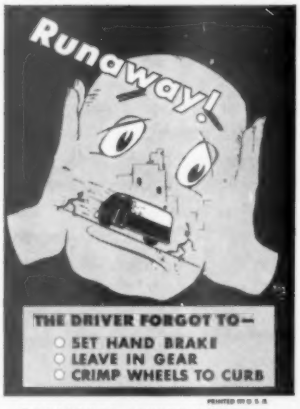

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Simplified Safety

—*From page 25*

They honestly believe that with, say, only four doctor cases during the year, they had no serious time losses because the employees went to the neighborhood doctor after work, there were no damaged tools and they don't remember any delay in production or deliveries, etc. However, time was lost and it is just as important—and probably more so—than the time lost by one of the workers in a multi-thousand employee corporation. We should be careful how we employ such comparisons.

Glib comparisons of frequency rates of small companies also might backfire. For instance, we can hardly "scare" the owner of a firm with 25 employees by saying that his frequency rate of 20 disabilities per million man-hours is more than twice that of the average for all other industries because only one such injury per year doesn't seem so bad. As far as he is concerned, that one mashed toe or cut finger or sprained back was just "an accident," and it isn't worth while for him to sidetrack some of his urgent duties to set up an elaborate safety program recommended by some outside expert.

Even if he goes far back into his own experience he probably could not recall any serious or preventable accidents. If he could, they probably would not fall into any pattern which would suggest preventive measures. Even if there were a pattern, the time lapse between similar, though infrequent, accidents would dull the incentive for preventive action. It is safe to say the average small employer just doesn't think much about accident prevention.

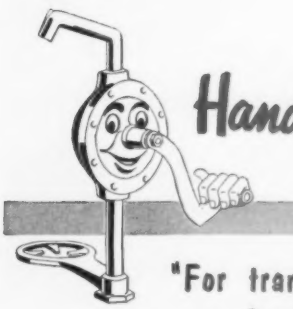
But small firms do have an accident problem. In the aggregate it is a big one. Firms which do little to control work accidents generally have more accidents than firms that have a safety program. And that means that smaller firms generally have higher injury rates. Reliable surveys by several associations and safety groups bear that out. All we have to do is bring the uninitiated, smaller employer to the same high level of safety performance as the large companies. That is easier said than done, but we are on our way if we can catch the attention of the small employer.

What Is Our Approach?

How can we interest and sell the small employer? What incentive can we hold before him? First, we must use realistic arguments such as:

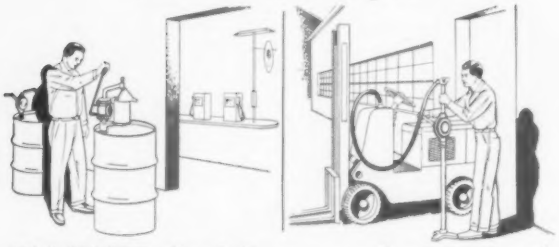
Possible insurance savings. In general, companies paying more than $500 a year premiums (and hundreds of thousands of small firms are in this category) are "experience rated" and to some degree receive a debit or credit for their poor or good accident experience. So all but the smallest companies can gradually reduce their workmen's compensation insurance through the reduction of injuries.

In fact, there are cases on record where favorable accident experience has so affected insurance



Handy Pump says:

"For transferring, for dispensing hard-to-handle liquids



BLACKMER Hand Pumps are hard to beat"

Here's a cleaner, more efficient way to dispense or transfer liquids from drums, tanks and vats. Avoid leaking and spilling of hazardous liquids. There's a Blackmer Hand Pump for almost any liquid material handling problem.

Now you can get dependable Blackmer performance in either rotary or piston type pumps. All Blackmer Pumps are carefully engineered and completely field tested under gruelling "job" conditions to assure you of years of service.

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liquid materials handling ®

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See Yellow pages for your local sales representative

rates that a "safe" competitor beats out an "unsafe" competitor. If these few cases come to light there must be many, many more unpublicized cases where the cost of accidents affects the cost of doing business. Moreover, even the smallest company's experience contributes to the accumulated experience in their industry and in their state, so, in a smaller measure their experience affects them by influencing the insurance rate for their group.

Potential hazards. It is our responsibility to convince the small employer that such things as occasional minor eye injuries or cuts are warnings that the next one might be "the big one." He should be reminded that mismanagement which results in general inefficiency also causes accidents which in turn cause injuries. He should be reminded that his experience with minor injuries is a tip-off that something is wrong; and that that something can lead to serious trouble and expense. Most accidents stem from failure to observe and correct simple, commonplace causes. So, we encourage safety as a part of every job.

But what about the serious hazards which the small businessman cannot foresee? There are new processes, new chemicals, and special hazards about which he knows little or nothing and with which he has had no personal experience. Here, he has no warning of impending danger and all we can do is urge him to profit by the experience of others.

Through the pooling of safety knowledge and the exchange of information the small businessman is being encouraged to profit by the experience of others before he is hard hit. He is being encouraged to get help, to use a limited amount of easy-to-understand safety leaflets such as the Council's *Seven Steps to Safety*, to participate as best he can in outside safety work, and to avail himself of the services offered by his insurance carrier, association, or safety council.

Indirect benefits of safety. A lot has been said about the indirect costs of accidents; not enough about the indirect benefits of accident prevention. Certainly, there are indirect losses, but by stressing safety gain as well as accident loss, our "package" might be important enough to catch the fancy of the small shop owner or mer-

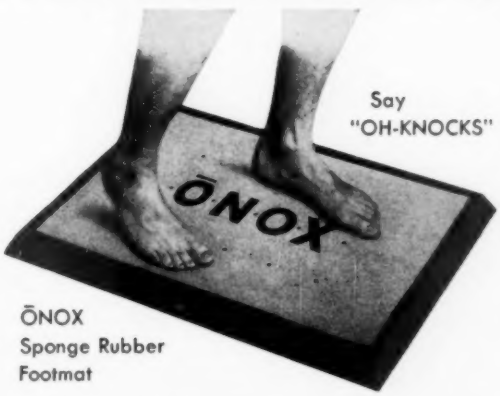
MARCH OF DIMES

FIGHT INFANTILE PARALYSIS

JANUARY 2-31

74% USE ŌNOX®

TO STOP ATHLETE'S FOOT



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74 of the 100 Largest Manufacturers use ŌNOX SKIN-TOUGHENER

Modern research has upset old theories about Athlete's Foot control. Skin specialists have proved that the best way to prevent Athlete's Foot is to improve the condition of the skin. *That's what ŌNOX does.* ŌNOX mineral salts toughen the skin and make it resistant to fungus growth.

No splash • No mess • No waste • Odorless
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60 DAY TRIAL OFFER

We will ship your trial order for any amount of ŌNOX and footmats. *You pay nothing* unless fully satisfied after 60 days' use.

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HAWTHORNE, CALIF.

chant. Since the consequences of an accident are felt too infrequently, safe working and safe driving benefits, which pay off all the time, should be stressed. It should be pointed out that a neat, well-run, safe job tends to encourage safe work habits, boosts employee morale and public good will and helps keep the business running smoothly. In our chart talks, our literature, and our movie, *Safety Doesn't Happen*, we pound home the point that "safety is just good business."

Reaching the Unreached

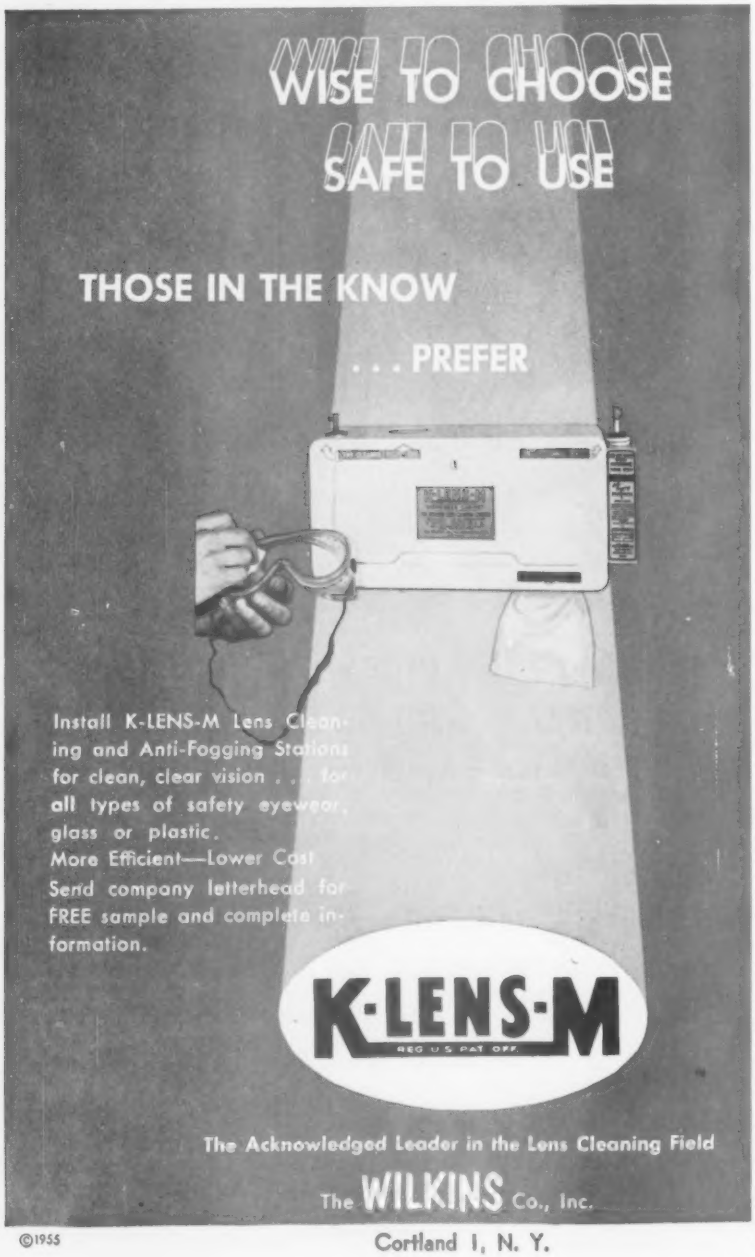
No single organization can hope to reach the several million small firms—more than 95 per cent of which employ fewer than 100 persons. Attendance records at local and national safety conferences prove that owners of small firms rarely come to even the most carefully planned and widely publicized "small business sessions." In brief, no agency has the manpower to *directly* reach and sell small firms, much less to give comprehensive, effective safety service to them. Since the small businessman can't meet us on our home grounds, we are finding ways to meet him on his.

With the help of an active Small Business and Associations Committee we are enlisting the support of "multipliers"—the business clubs, associations, and chambers of commerce which routinely reach the small employer. They understand his problems because they represent him. They have his confidence because he is one of them and understands them. He will listen to them because they talk his language. He attends their meetings, receives their publications and participates in their local and industry activities.

So, to reach the small consumer it seems logical that we use the "wholesaler." It sounds easy but it is almost as tough a selling job as that done on the large companies many years ago. Our booklet, *Signs of the Times*, explains why associations should act to control work accidents and, step by step, it outlines how they and the National Safety Council can do it.

Yes, it can be done. A grant from the National Association of Mutual Casualty Companies permits our Small Business staff of three to promote the program with "no strings attached." Since the start of our Small Business Program in 1951, we have helped dozens of associations in business groups to set up long-range safety programs for their members. Since then 34 associations have won our Association Safety Award for outstanding injury reduction and general excellence of safety activities. Of special significance was the unexpected activity on the part of state manufacturing associations. Prior to 1951 little, if anything, was heard from them; in 1956 two qualified for our award.

Injury reduction rates of 50 per cent or 75 per cent over only a few years are becoming commonplace in association safety work. It is proof that safety pays large


WISE TO CHOOSE
SAFE TO USE
THOSE IN THE KNOW
. . . PREFER
Install K-LENS-M Lens Cleaning and Anti-Fogging Stations for clean, clear vision . . . for all types of safety eyewear, glass or plastic.
More Efficient—Lower Cost
Send company letterhead for FREE sample and complete information.
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The Acknowledged Leader in the Lens Cleaning Field
The WILKINS Co., Inc.
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NO CAR WHEEL

the changes which take place in

groups of association members. It is now quite clear that thousands of small companies can be reached through their business groups and that very effective safety programs can be applied regardless of the size of the companies within the group.

So, as safety engineers let's simplify safety! Let's talk the language that the small employer can understand; let's use arguments that will sway him and then let's enlist the support of every possible multiplier to reach the vast multitude of employers who constitute our big "small business problem."

Free Eye Booklet For People Past 40

A NEW BROCHURE, specially prepared to help middleaged people preserve good vision, is being offered free by the National Society for the Prevention of Blindness.

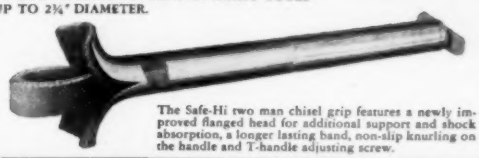
Your Eyes After Forty traces

Safe-Hi
CHISEL GRIPS

a striking improvement in sledging and chiseling

used extensively for steel stamps, star drills, punches and hand tools

TWO-MAN MODEL 18" LENGTH. HOLDS TOOLS UP TO 2¾" DIAMETER.



The Safe-Hi two man chisel grip features a newly improved flanged head for additional support and shock absorption, a longer lasting band, non-slip knurling on the handle and T-handle adjusting screw.

ONE-MAN MODEL 6" HANDLE. HOLDS TOOLS UP TO 1¼" DIAMETER.

The Safe-Hi one man chisel grip is durable and lightweighs only 5 oz. Shock insulated rubber belting band absorbs shock and prevents "creeping" of chisel through grip.

Safe-Hi chisel grips provide new protection against smashed fingers and hands by keeping hands well away from the danger of off-angle hammer and sledging blows. Since Safe-Hi chisel grips hold steel stamp or chisel securely, sledging and chiseling is more accurate and faster. The danger of flying chisels is also eliminated.

Safe-Hi spark-resistant chisel grips also available.

EXCELLENT FOR USE WITH STEEL STAMPS

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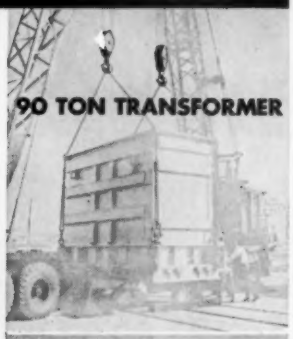
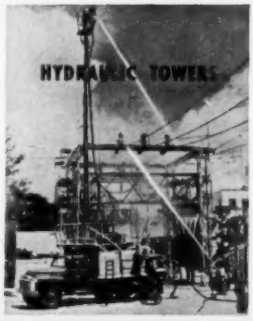
NO FINER PRECISION SWIVEL in the WORLD

→ Safety and performance are yours in the many practical, diversified uses for Miller Swivels because they are PRECISION BUILT. A wide range of 16 different stock styles with capacities from 700 lbs. to 250 ton. Special adaptations designed on request.





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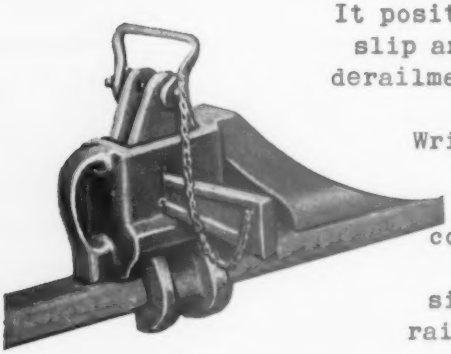
NO CAR WHEEL CAN MOVE

when it's held in position with the

M&M RAIL CLAMP



It positively will not slip and cause costly derailments and injury to workers. Write for further details about this compact, complete unit... Made in two sizes to fit any rail, worn or new.

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GUARD YOUR FEET

STEEL TOE SHOES—without guard are—

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Guard may be attached for slight additional cost.

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HOT FOOT SANDALS

STRAP ON QUICKLY—They're Heatproof

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SAVE MAN HOURS

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There is no substitute for Reece Wooden Soles

N-S-11-56

COLUMBUS, NEBRASKA

the changes which take place in the eyes during the "second half" of life, explains such diseases as glaucoma and cataract which strike hardest among older people, and answers questions. Single copies are available without charge from the Society, 1790 Broadway, New York 19.

Changes which occur in aging eyes, the booklet says, fall into two categories—normal developments and dangerous possibilities. The former, related to general changes in tissues and muscle tone, may spell eye fatigue, headache, inability to do close work. In most cases, these conditions can be corrected by eyeglasses, which help the muscles of the eye to focus clearly.

More serious, the booklet says, are glaucoma, cataract, diabetes and diseases of the arteries. However, "discovered in time — through periodic health checkups —and brought under control, they need not lead to loss of vision."

The booklet recommends a thorough professional eye examination every two years as the best insurance for people past 40.

It adds this word of caution about choice of eyeglasses: "The glasses you wear must be prescribed for you, by an eye doctor, after a thorough examination. Don't waste your money picking up a pair of spectacles displayed on the counter of some store. Make sure the pair you buy was made for the eyes which need their help."

In a special section, the booklet deals with questions frequently asked in letters to the National Society. Among them: "I am confused by the names of the various professions in the field of eye care. Will you define them?" . . . "I wear glasses. Should my sunglasses and the safety goggles I wear at work have the same prescription as my reading glasses?" . . . "What causes glaucoma?" . . . "Does television harm the eyes?" . . . "What is the best thing I can do to keep my eyes in good condition?"

The six-page publication is being offered by the National Society as part of its educational campaign to make Americans more aware of the value of good vision.

Industrial Safety Panel

—*From page 33*

occupied and used by personnel and manufacturing processes should be designed around good enginering principles. The structural part of the building should be designed to stand the elements to which it may be exposed, such as hurricane and tornado. It should also be fire resistant and provide for the comfort of personnel.

The mechanical aspects of the building should follow the latest engineering methods for lighting, air conditioning, ventilation, power supplies, electrical wiring, plumbing, and building materials.

Many plants are built to preserve the esthetic design. No revision of any external appearances can be made which would upset the symmetry of the building. Frequently, functional use is sacrificed to accomplish this end.

The most economical approach to a new plant is to view the land upon which the building will be built, considering the functional part of the operation. It should not be built in a vicinity where its operations will disturb the normal course of living of the citizens of the community.

The next step is to make a three-dimensional scale model of the process and equipment layout, utilizing the best industrial engineering methods for that particular type of industry and projecting into it every conceivable future change of manufacturing process. The building design should be to the scale model layout and kept functional. Reviews should be made by all who have constructive ideas. Also use consulting agencies on special phases.

When the project is in the planning stage, a brochure should be made up which will project the productive capacity of the plant, the return on investment, labor and machine utilization, and increased efficiency. Once the project plans reach final approval, keep them fixed so that any changes must be based upon a positive engineering and factual base, not on the whim of some

New DRY TAMP PERMAMix Floor Patch

Don't stop traffic to repair floors—use Permamix, the new all-temperature DRY TAMP floor patch.

DRY TAMP MEANS SPEED • No sticky mass to dig out of the drum or to handle • Permamix dry pours • sets instantly • feather edges perfectly • no production delays • non-skid surface.

ALL TEMPERATURE • Won't freeze • can be stored or used in *any* temperature • will store indefinitely • a stock room item • will not "set" in drum whether open or covered. Mistakes just can't happen. Tamp in place and traffic rolls.

CUTS MAINTENANCE COSTS on concrete, brick, tile or asphalt floors • no special equipment or skill needed • a one man job • comes in durable 50 lb. net wt. fibre drums • solve your floor patching problems for good.

Write for Details Now!

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There *is* safety in numbers! And 96 years at serving industry with signs that *sell* safety and accident prevention in all departments of plant and traffic is a record *READY MADE* is proud of—proud too of the numberless "blue chip" clients that have made READY MADE *SIGNS FOR SAFETY* their standards for safety and efficiency—with economy.

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READY MADE SIGN CO., INC.

signs for industry since 1861

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OVER 2,000 STOCK WORDINGS —yours for the asking!

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☐ Place our name on your list for your *new Ready Made* Catalog

Please send further information on:
☐ Safety & Accident Prevention ☐ Trucks
☐ Traffic ☐ Municipalities ☐ in-plant
☐ Special signs to order ☐ enroute
(copy enclosed for quotation).

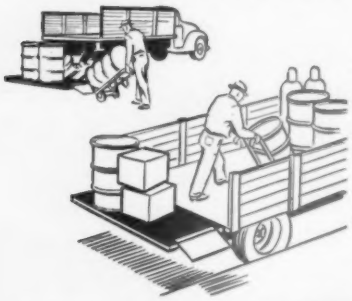
☐ Other

Name Title

Address

City Zone State

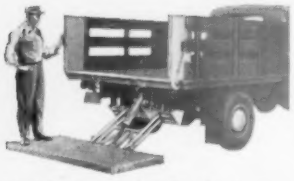
Here's trucking *AUTOMATION* that lets you combat High Cost Hauling



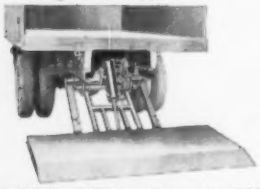
Cost saving way to handle heavy packaged goods such as barrels, cylinders, carboys, crates, etc. One man with a hand truck can handle any loading or unloading operation at big savings of time.

ANTHONY LIFT GATES

FOR ¾ TON and Larger Trucks and Semi-Trailers



Model No. 144 handles loads up to 1000 lbs. Cuts loading and unloading time 50%.



Model No. 145 handles up to 2000 lbs. on 1½-Ton and larger trucks and semi-trailers.

Model No. 146 handles up to 4000 lbs. on heavy trucks and semi-trailers.

If high freight rates and costly delivery services are cutting a swath out of your profit picture, here are five ways you can offset them.

1. Speed up deliveries.
2. Develop faster, easier ways of loading and unloading trucks.
3. Systematize handling of bulky, awkward, heavy shipments.
4. Prevent damage to goods, yet make it easier and safer for drivers to handle most shipments alone.
5. Help drivers contribute to the satisfaction of the receiver.

All of these advantages are yours when you install Lift Gates on your trucks. We will be glad to recommend the systems, the size and type of Gate best suited for your work.

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individual or group.

There are many new building materials and designs today which have been developed and are available for plant constructions. This information should be well known to the building committee so that they can engineer these ideas into the new plant.

I can best answer the question, "If your company were building a new plant, what safety features would you like to see incorporated in it?" by saying that accident prevention and plant protection work is a vital part of every phase of the new plant. There are no special safety features.

Accident prevention and plant protection form a basic phase of the manufacturing operation, of costs, of sales, of engineering, of industrial relations-employee welfare, and the final product produced. Elimination of controls on any part of the program results in an ineffective and unsuccessful result of the remaining functions. An accident resulting to the manufacturing operation without personal injury can cause serious results to the company, even to the extent of bankruptcy. An accident not protected against which results in personal injury is not only an economic loss to the injured but also a loss to the moral responsibility of the company.

Let's sum this up by saying, "Build safely on good engineering designs for good accident prevention and plant protection."

MR. RIEFENSTAHL:

Industry is to be congratulated for its progress in safety engineering. Safe plant layout, physical safeguards, personal protective equipment, and safety committee organization are primary requisites to every safety program.

However, injury statistics indicate that observance of these fundamentals is the controlling feature in only a small percentage of injuries. The major problem is obviously the human element.

Supervisory and employee training appear to be the constants in an expanding technology. Shaping individual employee attitude, influencing personal characteristics, and controlling performance

—these are the pressing safety and production problems of today.

A feature I would like to see incorporated in the new plant would be adequate facilities for carrying out this psychological approach to safety. A special room, properly equipped, preferably next to the plant dispensary, would facilitate job and safety training, safety meetings, conferences, visual aids, and other educational programs.

New employee indoctrination, first-aid training, job training, and health and welfare projects are, to my mind, valuable intangibles which contribute to employee morale, cooperation and proficiency in safety and production.

A second feature would be a two-way communication system from office and conference room to all plant departments. This would be a practical time-saver, carrying messages to and from key personnel. It should be readily adaptable to programming safety and training information items to strategic plant areas for mass employee distribution.

MR. WAGNER:

First, I would recommend that management establish a written safety policy for the new plant. This policy, in the form of safety standards, would have as its No. 1 item management's philosophy that employee safety is of first importance. Therefore, a safety department is being established to help management and supervisors provide a safe place to work.

Certain requirements are (and will be) established for the protection of employees, which must be agreed to at the time of employment. The personnel and medical departments, through testing and physical examinations, will provide operations with good employees, physically and mentally.

Management will assure employees that accident prevention is humanitarian and give safety its rightful place in the organization. There management can make certain that every person does everything possible for employee safety. With this management philosophy, the safety director will be consulted regarding engineering safety into the physical layout of the plant.

The safety director will be on the grounds during installation of machinery, to assist in guarding and in following the many federal, state, and local safety codes and regulations. Management, through the safety director, will not permit any equipment to be turned over to operations without adequate guarding. Safety engineering services can be coordinated with the plant engineering department or by a design engineer on the safety staff, according to the size of the operation.

Now, company policy is established, the plant built; we are ready for the employee. Before employee status is finalized, each candidate for employment will receive an intense safety indoctrination and will be asked to sign a pledge binding him to the safety requirements of his job. This employee's signed pledge and management's philosophy establish a partnership and provide for the use of personal protective equipment and observance of safety rules.

Management will provide for supervisory and employee training, including job safety training. Written job procedures, i.e., job descriptions with accident prevention foremost, will assist the already-trained supervisor to teach his employee how to do the job safely.

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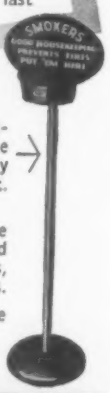

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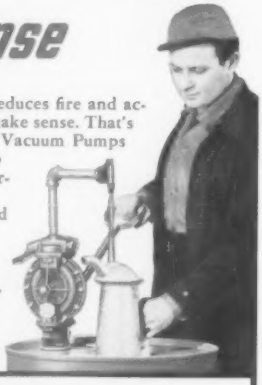

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safety meetings is essential. Visual aids and National Safety Council training materials and membership services complete an important part of the safety training program. National Safety Council training courses should not be overlooked for the safety director. Adequate fire protection, together with a trained employee fire brigade, will protect workers and plant property.

Maintaining interest in accident prevention will be given attention by the manager's staff and supervisory groups, as well as the safety director. Contests, films, and employee recognition will assist in this phase of the program. Housekeeping inspections help provide a clean, orderly, and safer place to work, as well as maintain interest.

A well-rounded accident prevention program will include: (1) safety training, (2) safety engineering, (3) safety promotion, (4) enforcement, (5) safety engineer's library, and (6) a health and sanitation policy.

Testing Air

—From page 37

are present in concentrations approaching or exceeding the lower explosive limit. The presence of combustible gas in concentrations above the upper explosive limit becomes a hazard upon mixture with air, as in ventilating operations. Therefore, to be entirely satisfactory from the standpoint of explosion hazards, the detection equipment should be capable of detecting combustible gases and vapors in mixture with air in full range above a minimum of approximately one per cent.

Combustible gas detectors which are being used in the greatest proportion today are of the hot-wire type. The original patent of this principle was applied for some 60 years ago. However, the accuracy, range, and applicability of the present instruments have been advanced tremendously. The commendable feature of this type of detector is that most of the gases normally encountered will indicate on the instrument in concentrations approaching or ex-

ceeding the lower explosive limit, regardless of the lower explosive limit of the particular gas.

The temperature of the surrounding air has no significant effect on the readings obtained on this type detector. The maximum deviation between zero and 75 F. would be less than 0.5 per cent of methane.

The identification of specific gas contaminants in the field presents a difficult problem. In general, carbon monoxide, which is easily detectable, may indicate the presence of manufactured gases, exhaust gases from internal combustion engines, or breakdown of electrical insulations. Appreciable quantities of carbon dioxide (above 0.5 per cent) and insufficient oxygen will show the presence of fermentation gases. Other gases can be identified by association of odor. However, if it is necessary to determine the identity of the gases, technically trained personnel equipped with the necessary apparatus are needed.

At Consolidated Edison we have been using a hot-wire type instrument that will detect combustible gases in full range concentration. To this is attached a safety lamp for determining oxygen deficiency. And where manufactured gas is distributed, a chamber for carbon monoxide testing is provided.

This represents the two and three-way instrument which is the basis for recording the atmosphere conditions in our subsurface locations.

To get some idea of the extent of testing, consider this list of individuals and groups who carry out this assignment.

1. Survey crews on continuous basis. Test manholes, service boxes, etc.

2. Inspection crews on periodic inspection of electrical installation condition also test the condition of atmosphere.

3. Crews which test subsurface structure locations that are to be worked in the next day.

4. Crews which do periodic maintenance of equipment in subsurface locations.

5. Gas regulator crews test atmosphere in regulator pits from gauge panel weekly and from sampling hole in manhole cover monthly.

—*Turn page*

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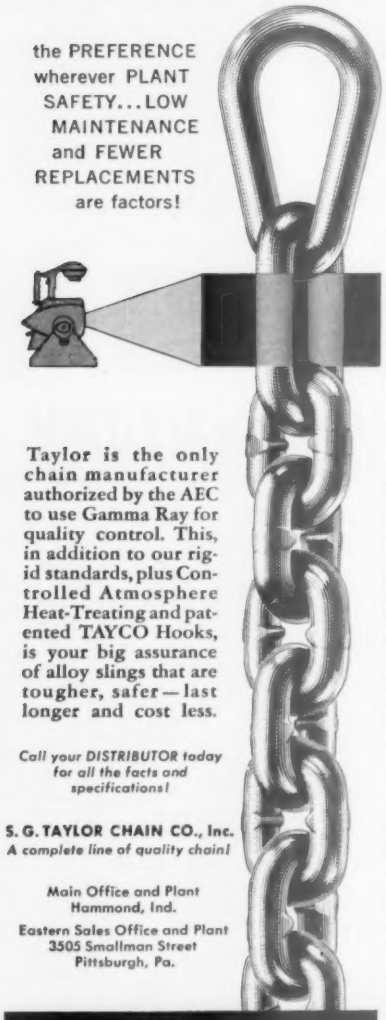
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Film of Protection

—*From page 29*

was found effective against the cutting oils, although the 30 percent silicone in petrolatum mixture was ineffective.

In this study, films prepared on standard micro slides were immersed in various test solutions. The quantity of cream removed was measured at various time intervals up to 24 hours. The two preparations containing large percentages of silicone were found effective against a wide range of aqueous irritants or sensitizers, including mineral acids, alkalis, salts, formaldehyde, soluble machine coolants, and some alcohols. None of the creams tested proved effective against petroleum fractions in the low boiling range such as gasoline, mineral spirits, Stoddard solvent, and kerosene.

Only one of these preparations was subjected to extensive clinical study in industrial work and the clinical results appeared to substantiate the laboratory conclusions.

It should be noted that in neither of these studies were the factors of film thickness, temperature, or humidity well controlled, and that both test objects and test procedures differed.

The only recent, adequately controlled study was reported several months ago by the United States Public Health Service.[15] This was a laboratory study in which six silicone creams, two silicone greases, 10 non-silicone preparations and white petrolatum were tested against a variety of agents. In general a protective ointment was tested only by agents against which it was allegedly effective.

These tests were carried out under rigidly controlled conditions in which film thickness, temperature, and humidity were all kept uniform. Essentially, the test method consisted of securing and recording the penetration-time of a challenging solution through a thin uniform film of ointment between two confined spot-test filter papers.

It was concluded that the best over-all protection was provided by white petrolatum and that the silicone greases were the best water repellents. Barrier action of the commercial non-silicone

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WIRE ROPE assemblies were recently called upon to perform an unusual service requirement when it was decided to further strengthen the wooden pile clusters at Detroit Edison's new coal unloading dock.

To reinforce the docks against extra heavy demands on their load carrying ability, management consulted with engineers, the dock builder, and wire rope specialists and selected preformed wire rope equipped with Dualoc wire rope endings, products of the American Cable Division, American Chain & Cable Company, Inc., Wilkes Barre, Pa.

The dock runs approximately 1,500 ft. along the Rouge River and is located at the confluence of the Rouge and Detroit Rivers in River Rouge, Mich. Two concrete cells, more than 138 ft. in circumference, provide major support of the structure.

Twenty-six large wooden pile clusters are spaced approximately 50 ft. apart. Each cluster is made up of 15 piles, measuring 6½ ft. in diameter.

To properly support the weakened pilings, 24 wire rope sling assemblies of 1½-in. rope, averaging 50 ft. long and equipped with turnbuckles, were used in linking each of the pile clusters. One large cable assembly with its swaged end fitting was wrapped around each of the concrete cells and connected to the last pile cluster by a looped sling.

In addition to the pile supporting cable assemblies, 12 special swaged wire rope assemblies were anchored on shore and looped over every other pile cluster. In all, a total of 40 cable assemblies were used to increase the strength of the pile clusters in resisting impact loads when coal ships are tied up at the dock.

protective ointments tested was found to be generally inferior to that of white petrolatum and to that of the two commercial silicone protectives, which displayed superior performance.

These findings confirm the earlier study reported by the Public Health Service in 1946,[12] before silicone creams were available, in which 27 commercial ointments, anhydrous wool fat, white petrolatum, and Carbowax 1500 were tested against a variety of agents. At that time, it was concluded that anhydrous wool fat and white petrolatum were among the best general skin protectives, not only

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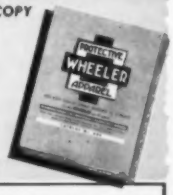

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against alkalis and acids, but against oils as well. Where conditions are such that this protection must be supplemented, numerous commercial ointments, they stated, are available. These they found to vary widely in ability to withstand penetration by alkali, acid, or oil.

In the current United States Public Health Service Survey organic-solvent challenging liquids were not stressed, since admittedly, the silicone polymers are ineffective against these agents. The study emphasized that such evaluative procedures may be valuable as a guide to the clinical usefulness of barrier creams, since it is improbable that barrier agents which prove ineffective in laboratory tests will provide good protection in clinical trials.

As yet, similarly well-controlled, comparative clinical studies have not been conducted or reported, leaving a large gap in the available information.

Although the silicone creams have been found to have a fairly wide range of effectiveness, they have several drawbacks. The first is the cost factor, since silicone creams cost much more than non-silicone preparations; the second is cosmetic acceptance, or lack of it, since those agents tested and found effective use bases either too greasy or too tacky.

New preparations are now being evolved which promise to be both effective and pleasant to use. One of these, an experimental non-silicone cream studied recently at the Institute of Industrial Medicine, was found very effective in preventing skin cancer in mice following the application of carcinogenic material.[11]

It must be re-emphasized, however, that before any preparation is marketed and widespread claims made for its effectiveness, it should, routinely, be subjected to critical, well-controlled, laboratory and clinical studies to determine its areas of effectiveness.

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Consultation Corner

—From page 12

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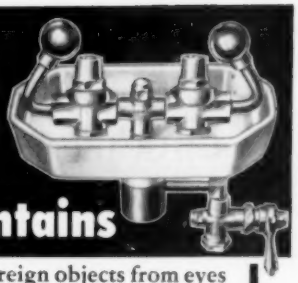

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burning or similar fire-producing operations. Grinding, drilling or similar spark-producing operations shall be considered hot work except when in the judgment of the Certificated Gas Chemist, circumstances do not necessitate such classification.

Briefly, this means that before you can proceed with any hot work on a ship's fuel tank, you must prepare the tank in accordance with federal regulations, secure the services of a certificated gas chemist, and have him issue the prescribed certificate. You can secure the names of qualified men from the Coast Guard Merchant Marine Inspection Service.

As to your idea of flooding the tank with water within a few inches from the top and then inerting the remaining space with carbon dioxide or other non-flammable gas, we are unable to find that this is permissible. The tank and all connections must either be completely cleaned and gas-freed, or the entire tank be inerted either with non-flammable gas or by filling the space *to the top* with water.

Let us repeat that the entire procedure is more detailed than outlined above and the work should not be undertaken without consultation of and full compliance with the applicable regulations. Discuss the project with the Coast Guard Merchant Marine Inspection Service before undertaking the project.

Falling Doors

Question. We have just completed a railroad siding into our plant and want to be prepared for possible hazards of box car doors falling when being handled by our warehouse men. Can you give me some rules to follow?

Answer. We checked various railroad safety rule books in our library. One typical railroad has this safety rule:

"While opening or closing car doors, keep fingers clear of edge or jamb of door, casting, or rail on which door travels. Keep body clear of opening made by door to avoid falling freight."

Another large railroad includes the following:

"Before operating roller type side door on box car be certain door is properly tracked. If door is off track and cannot be retracked, use rope equipped with hook to pull door open or shut, keeping clear of door."

Our staff engineer discussed the second rule with a railroad safety director. In his opinion it should be possible by an inspection of the bottom track and rollers to determine whether the door is properly tracked. In other words, if everything is all right at the bottom, it is probably safe to assume that the door is also properly tracked at the top.

If the top track and rollers are exposed, it should be possible to determine by a glance whether the door is properly tracked at the top. If the top track and rollers are covered by a raincap or something of that nature, then the cap itself will keep the door from falling even if it should come untracked at the top. Under these circumstances, again, if the door is properly tracked at the bottom, there is no likelihood that the door will fall.

In case of doubt, or if the door sticks, the railroad safety specialist recommends the use of a regular car door opener, with everybody standing clear of the door. We refer you to the safety rule quoted above, which suggests the use of a length of rope with a hook attached. The hook can be placed in the door handle, and several men can pull on the rope if necessary and stay out of the way of the door.

Mention should also be made of the other hazards covered in the above quoted safety rules:

(1) the possibility of material or packages falling out of the car door when it is opened, and (2) the possibility of pinched hands or fingers by reason of workers having their hands or fingers over the leading edge of the door or the bottom edge.

To avoid the former possibility, workers should stay clear of the door opening until it is made sure that nothing is going to fall out. In the second case, the remedy is obvious: keep hands clear of the leading and bottom edges of the door while opening it.

Wire from Washington

—*From page 6*

the-road accidents involving vehicles of common and contract carriers. However, the number of fatal accidents dropped 8 per cent and the number of persons killed showed a decrease of 12 per cent. In the passenger carriers alone, there was a 20 per cent increase in the number of accidents, a 16 per cent increase in the number of fatal accidents involving busses, and a 25 per cent increase in the number of persons killed.

The Defense Department announced that of 18,000 military personnel killed in military aircraft and motor vehicle accidents since 1951, more than half of the total, or 9,100 deaths were due to accidents in private motor vehicles. Of the remainder, 7,600 lost their lives in military aircraft accidents and 1,300 in Government-owned ground vehicles. The report also showed a downward trend in the accident rate for Government-owned vehicles, but an increase in the rate of accidents and fatalities involving privately-owned automobiles.

A Maryland court, following decisions of courts in California and West Virginia, refused to enjoin the construction of a highway with a median strip divider which provided no cross passageways. The objection arose because of the diversion of traffic away from a shopping center and the reduction of access to such stores. The court held that in the absence of a showing of abuse of discretion, it was within the discretion of the State Roads Commission to decide where to construct such median strips to create freeways or limited access highways without paying damages to property owners adversely affected thereby.

Home Safety. The Food and Drug Administration seized five carloads of bulk wheat for filth contamination. This was among the first actions taken since the higher standards of cleanliness for bulk wheat went into effect on July 1, 1956. The new standards are intended to promote increasing cleanliness in grain destined for food use.

The Supreme Court, which opened its new term, will hear two attacks on the constitutionality of the provisions of the Food, Drug and Cosmetic Act which bar the dispensing of habit-forming drugs without prescriptions.

N.Y. Stations Broadcast Emergency Weather Data

THE NEW YORK CITY Civil Defense Organization began September 19 broadcasting emergency weather information using facilities of the municipal broadcasting station WNYC as the radio outlet for the Civil Defense network connecting 24 radio and seven TV stations in the city.

The network, for the past several years geared for emergency operation caused by enemy action, is now prepared to give periodic authentic weather reports during any sudden change involving snow storms, hurricanes and floods. The reports will originate directly from the Weather Bureau and will be transmitted over the Civil Defense network through station WNYC to be broadcast simultaneously or rebroadcast by recording or quoted by news commentators.

The signal to broadcasters that emergency weather forecasts are imminent will originate with the New York City Office of Civil Defense through WNYC, which has been performing this service through the cooperation of the Weather Bureau for the past 15 years.

The lazy man aims at nothing, and usually hits it.

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Knurled sides for positive grip—patented design provides perfect balance and deeper impressions. Especially recommended for toughest jobs on steel castings, cylinders, tool steel, etc. All sizes available 1/6" to 1" characters.

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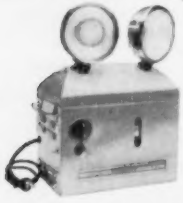
ONE more hour of DANGER!

STANDARD TIME

The return of shorter days is a reminder that darkness means added hazards to people and property. For almost half a century, Carpenter-Lights have guarded against the dark and the consequences of light failures. For dependable emergency lights, specify CARPENTER.



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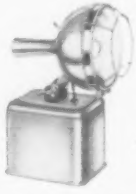
The finest protection against panic and injury. Automatically, instantly, illuminates large areas or pinpoints critical controls with two powerful, sealed-beam floodlights. Essential wherever people congregate or where vital operations must go on. Many types, including explosion-proof and remote control, available. U/L APPROVED.



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For applications requiring high-intensity, portable searchlights or work lights, CARPENTER'S "Portalites" are highly recommended. Many types and sizes to choose from. Illustrated model has rechargeable battery and two-way switch giving choice of mile-range searchlight or 24 hour continuous work light.

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☐ Complete Catalog ☐ New "Hydro-Caps"
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The Safety Library

—*From page 14*

Institute, 50 West 50th St., New York 20. 1956, 13 p., $1.00.

Railroads

Accident Bulletin No. 124. Summary and Analysis of Accidents on Steam Railways in the United States. Subject to the Interstate Commerce Act—Calendar Year 1955. Interstate Commerce Commission, 1956, 94 p. For sale by the Superintendent of Documents, Washington 25, D. C., 95c.

Solvents

Safety with Solvents. U. S. Bureau of Mines, Publications Distribution Section, 4800 Forbes St., Pittsburgh 13, Pa. 1956, 25 p. Information Circular 7757.

MAGAZINE ARTICLES

Electrical Industry

"Fatal Accidents in the Electric Light and Power Industry." S. H. Young, *Edison Electric Institute Bulletin*, Aug. 1956, p. 285-287.

Fire Protection

"New Code for Fire Extinguishers." *Factory Management and Maintenance*, Sept. 1956, p. 152-154.

Food Industry

"Why Accident Costs Run High and What You Can Do About It." *Food Engineering*, Sept. 1956, p. 41-42+.

Health

"Activities of Medical Mobile Units." Kieffer Davis, *Industrial Medicine and Surgery*, Sept. 1956, p. 431-432.

"The Committee on Silicosis Reviews Research on Drill Dust." G. R. Yourt and J. C. Bloomer, *Canadian Mining Journal*, Sept. 1956, p. 76-79.

"Nurse-Doctor Team in Small Industry." Elston L. Belknap, *Industrial Medicine and Surgery*, Sept. 1956, p. 429-430.

Hospitals

"Radiation Protection in the Diagnostic X-Ray Department." Norman Bolker, *United States Armed Forces Medical Journal*, Sept. 1956, p. 1281-1288.

Mines

"Designs for Heating Mine Air." R. W. Thompkins, *Canadian Mining Journal*, Sept. 1956, p. 102-104.

"How to Prevent Falls of Ground Accidents." G. G. Grieve, *Canadian Mining Journal*, Sept. 1956, p. 82-83.

Off-the-Job Safety

"Savvy Promotion of Off-the-Job Safety." E. P. Marconi, *Factory Management and Maintenance*, Sept. 1956, p. 146-147.

Organization

"The Job Hazards Program at Hollinger." J. E. Disley, *Canadian Mining Journal*, Sept. 1956, p. 92-95.

"Safety at Bethlehem Steel." R. M. Hartman, *Canadian Mining Journal*, Sept. 1956, p. 88-91.

Paper Industry

"Safety at Hudson Pulp and Paper Corporation's Palataka Division." C. Shorty Lorentzson, *Southern Pulp and Paper Manufacturer*, Sept. 1956, p. 42-43.

Physical Examinations

"Guiding Principles of Medical Examinations in Industry." *Industrial Medicine and Surgery*, Sept. 1956, p. 443-446.

Diary

—*From page 22*

Hall was worth while.

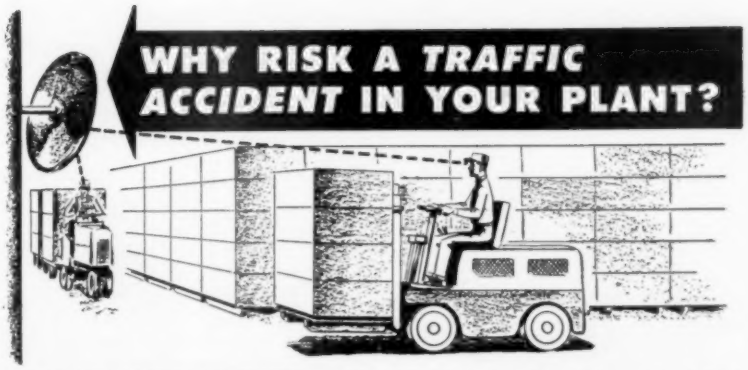
The third incident took place in a dining room of the Hilton this afternoon. We were at an old timer's table—I was the junior safety man of the four, and I've 20 Congresses behind me.

We had a good time reminiscing about the good old days, damning the younger generation as decadent, bragging ourselves up as the hardy pioneers of the tough years.

Lou Bray suddenly interrupted the talk by saying, "See that boy over there? There's one of the good young ones. He beat me out of a sectional first place last year. He's with Madee, Inc., and they'd never finished better than tenth before. I don't know what he's got, but he's got something."

And Gene Harton spoke up, saying, "I know one thing he's got. He's Hanley Laurie, old Jake's son. He's one of the few second generation safety men in the business. You knew Jake. He had a one track mind on the subject of material handling. But he sure knew that one track like a book.

"I've talked to the boy. He has a very clear idea of where his old man was right and where he was narrow-minded. Jake sent him through a good engineering



KLEAR-VU SAFETY MIRRORS are the answer to the dangerous blind corner problem in your plant or warehouse. They are also adaptable for outdoor use in your parking lot, loading dock area or other points where traffic converges.

Mounted at cross aisle intersections, entrances and exits at a height of 8 to 10 feet, Klear-Vu Safety Mirrors clearly reflect oncoming intersection traffic to both power truck operators and pedestrians.

Style	No.	Dimensions
Circular Convex Glass	120	12" dia.
Circular Convex Glass	180	18" dia.
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Circular Convex Glass	300M.R.	30" dia.
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Flat Glass Rectangular	918	9"x18"
Flat Glass Rectangular	1640	16"x24"

M.R. indicates metal rim.

Available in either convex or flat glass styles, the mirrors are easily installed and quickly adjustable to any desired angle.

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Write for Bulletin.

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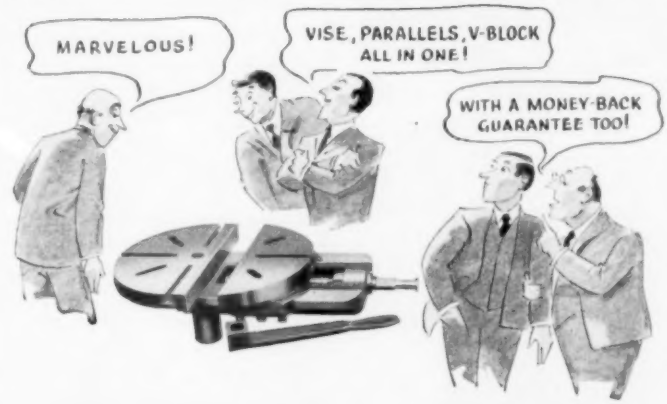

MODERN Safety Drill Table!

FREE TRIAL OFFER
write for full details!

The handiest, fastest, safest way to make drilling set-ups! Just drop in and drill—all shapes—all sizes. We guarantee it will save its cost in labor alone in six months—to say nothing of the savings from uninterrupted production. We'll put one in your shop for 30 days. Not one penny cost to you if you aren't enthusiastic. Literature on request.

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school, then put him out to pasture with a construction engineering firm for five years to season him, before he let him start into safety work. You can't beat the kid's background, on top of which he has brains and guts."

Then Mackie, the oldest of us all, said, "The boy's not getting the backing he needs from Madee, since the management shift there. He's unhappy. He'll be moving soon."

I asked for a table phone, called my boss in Boston, and asked him if he'd filled the vacancy in Heperton. He said no. I got the price range that I could offer, and authority to negotiate.

The boy and I had dinner tonight, and the deal is all but closed.

Yes, it's been another good Congress—just like the others and entirely different from any of them.

Safety Man's All Wet

—From page 92

has proved very popular among employees. Each month a drawing is made from the names of all persons in departments which have recorded 30 days without a lost-time accident. Prizes have included sports equipment, blankets, picnic kits, cameras, etc.

Plaques and trophies are awarded at cake and ice cream parties for departments achieving 1,000, 500, and 365 days without a lost-time accident.

A continuing clean-up contest, tagged "Operation Sweepstakes" and conducted in three-month "heats," helps promote good housekeeping. Departments are represented by mythical horses with such names as Don't Panic, Why Certainly, Me Too, and Breathless and each person in a winning department receives a silver dollar. An elaborate board with movable horses keeps workers up to date on their department's progress.

With one goal behind them, Simpson employees have no intention of resting on their laurels. The next target is a million accident-free man-hours, which is ex-

TESTS SHOW YOU'RE SAFER with ACME

. . . . the Gas Mask that Gives You MAXIMUM USABLE VISION

Vision-scope tests made with leading industrial gas masks prove that ACME Full-Vision Gas Masks lead the field in giving the wearer clear, undistorted vision—up, down, and to either side. Along with maximum usable vision, the ACME provides greater comfort, less fogging, minimum breathing resistance and acceptable conversation transmission—all at down-to-earth prices. Write for Bulletin No. 562 on Visionscope tests and Bulletin No. 541 on gas masks.

ACME PROTECTION GUIDE LISTS 433 GAS HAZARDS AND HOW TO OVERCOME THEM

This practical guide is a "*must*" for industrial hygienists and safety engineers. It lists 433 hazardous gases, mists, fumes, smokes and dusts along with the ACME gas mask equipment to overcome each specific hazard. Write for Bulletin No. 542.

ACME PROTECTION EQUIPMENT COMPANY

1209 KALAMAZOO STREET
SOUTH HAVEN, MICH.

pected to be reached about November 10. To sustain interest, the company announced an all-plant smorgasbord scheduled for the latter part of October and obtained 1,000 plastic buttons from the National Safety Council.

Predicts 2,000 Per Cent Rise in Power Demand

AMERICAN PEOPLE in the year 2006 will be using 20 times the electric power they are now using, a utility official predicts.

In a talk before the Illuminating Engineering Society's 50th Anniversary National Technical Conference in Boston, William Webster, executive vice-president of New England Electric System, estimated that more than 11,000 billion kilowatt-hours of electricity would have to be produced in 2006 to meet the nation's requirements.

Mr. Webster, who is also president of Yankee Atomic Electric Company, New England's pioneer company in the nuclear field, pointed out that he exercised considerable restraint in arriving at the 11,000 billion kilowatt-hour figure. He said that straight projection of the nine per cent rate of growth of the last 20 years would have resulted in a figure four times this large for the year 2006, or some 80 times the present.

Generation of electric power from the nuclear plants is going to be increasingly important as the years go on.

"In fact," said Mr. Webster, "by the year 2006 it is inevitable, as we now see it, that nuclear fuel will predominate. If we are to work into any such atomic program, it is high time that a full-scale commercial start be made."

New England, he continued, distant from coal mines and oil wells, is probably the place where atomic power will first become competitive.

Mr. Webster reported the Yankee project now has passed the preliminary stages and is moving forward at an accelerated pace. Engineering work is already in progress at the site including investigations of sub-soil, cooling water, accessibility, meteorology and background radiation. Clear-

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EVERY TYPE OF SKIN CLEANSER

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manufactures all three from raw material to finished product!

A Specialized Soap for Every *Type of Plant Requirement!*

Whether for light, heavy or extra heavy duty, for general plant or office use, or to solve specific cleansing problems, our more than 40 years of experience in serving industry is at your service. *Your inquiries will receive prompt and intelligent attention!*

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UNION PACIFIC RAILROAD

UNION PACIFIC RAILROAD CUTS WAREHOUSE ACCIDENTS WITH

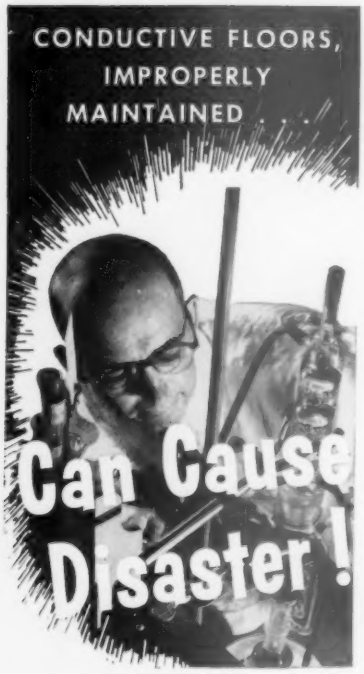
SHOCK-PROOF Kosch Steering-Aid

Both the Stores and Mechanical Departments of the Union Pacific Railroad recently installed approximately 100 Kosch Steering-Aids on the fork lift trucks operating in their warehouses and shops.

SHOCKPROOF STEERING reduces accidents! Kosch Steering-Aid prevents road shocks from reaching the steering wheel and eliminates kickback. Operator has complete control, without danger of wheel-spinning. Steering-Aid holds guide wheels in the position they are set — even over rough ground and foreign objects. Automatic operation. Easy to install.

Let Kosch Steering-Aid help you and your plant build a better safety record. WRITE TODAY for complete information about Kosch Steering-Aids for the fork lifts in your plant.

KOSCH MANUFACTURING CO., Dept. 42, Columbus, Nebr.



insist upon a *conductive* wax bearing this seal . . .

Static electricity strikes without warning. The installation of conductive floors in the laboratory answers part of your safety problem . . . but only part of it. The floors must be maintained properly with safe cleaners and waxes to retain their conductivity and safety factor! Since *all* conventional waxes and finishes are insulators which immediately decrease conductivity and enhance the possibility of an explosion, only an accepted conductive wax should ever be applied to conductive floors!

There are only two waxes that bear the Underwriters' Label on the basis of safe electrical conductivity . . . Huntington's VC-2C and H-22 Conductive Waxes!

They are water-based waxes which produce a durable, water-resistant surface that may be polished to a luster.

Tell us the type of conductive floors you have and we'll see that you receive samples of the correct wax and cleaner for your use. We'll be glad to set up proper maintenance procedures for your conductive floors. There is no obligation.

HUNTINGTON CONDUCTIVE WAXES
with SPAL Concentrate Detergent

Huntington Laboratories
Huntington, Indiana
Philadelphia 35, Pa. • Toronto 2, Ontario

ing of the site started two weeks ago and construction will begin next year with the completed plant scheduled for operation in 1960.

In the present state of the atomic art the Yankee plant is expected to cost at the rate of $250 per kilowatt against a conventional fuel-fired plant of the same size at $160 to $190 per kilowatt.

The speaker stressed the importance of integrating atomic electric power plants into existing electric systems as well as the importance of building an organization of people who know the atomic power picture and can grow with it in the future.

Welded Tank Prevents Liquid Propane Spillage

STRENGTH of welded structures, shapes, and tanks was graphically illustrated recently when a truck tanker, fully loaded with highly flammable liquid propane gas and stored under a pressure of 200 psi., crashed into a bridge abutment. Although the undercarriage of the carrier was totally demolished, there were no leaks in the welded steel tank itself nor was a drop of liquid propane lost through other causes.

This liquid carrier tank was manufactured by the Mosher Steel Company of Houston, Tex., and fabricated from T-1 steel, a product of the U. S. Steel Corporation. In welding the steel plate by the submerged arc method, Mosher utilized A-S-8620 automatic welding wire supplied by the Page Steel & Wire Division, American Chain & Cable Company, Monessen, Pa. The steel has a tensile strength of 105/130,000 psi. and an elongation of 15-20 per cent, and is comparable to and compatible with the 115,000 psi. strength and 14 per cent elongation of the welding wire.

Before repairing the truck's undercarriage, the tank was sandblasted clean and thoroughly Magnaflux inspected. No cracks could be found in either the steel plate nor at any of the welds.

With progress in transportation there's no longer such a thing as a distant relative.

too hot to handle?

For production line work, or one-at-a-time jobs—wherever exposure to extreme heat exists—Racine Asbestos Gloves offer the finest and most comfortable protection obtainable. Available in any grade of asbestos required; Racine Gloves work more efficiently and have greater stamina.

Your nearby Racine Glove distributor is stocked and ready to serve you. Order from him today.

FREE JOB-TEST... send us in detail, a description of materials to be handled, temperature conditions and type of job operation. We will then recommend the correct gloves and send FREE samples for you to test.

Racine
GLOVE COMPANY, INC.
RIO, WISCONSIN
Safety Gloves and Apparel
FOR INDUSTRY

Calendar Contest Winners For September 1956

The subject of the September Safety Saying Contest was "Guard Against Hazards." Participants in the contest were to write, in 10 words or less, what the elated little bird with the key was saying to the dejected cat that he had caged. First prize of $100 was awarded to Mrs. Mary McCullough, of Medford, Ore. Mrs. McCullough's line was

"Dangers you can't eliminate—ISOLATE!"

Second prize of $50 went to Pauline Guyer, of Chicago, for this line:

"I always say, if you can't eliminate it, guard it."

Third prize of $25 went to George Gambler, of Bethlehem, Pa., for the following line:

"When you know of trouble, your guard should be double!"

Thirty $5 prizes went to:

Mrs. Margaret B. Collins, Bradford City School District, Bradford, Pa.

Mrs. D. C. McLeod, Southern Bell Telephone Co., Birmingham, Ala.

Lt. Otto P. Eberlein, United States Navy, Patuxent River, Md.

Louise Surgison, West Penn Power, Greensburg, Pa.

David Boland, Joanna Cotton Mills Co., Joanna, S. C.

Mrs. Stanley Clark, Oliver Iron Mining Div., U. S. S., Remer, Minn.

Robert A. Smith, E. I. Du Pont Co., Seneca, Ill.

Mrs. George A. Gannon, Rock Island-Term Ry., St. Louis, Mo.

Lewis S. Stone, Jr., Gallery Chemical Co., Gallery, Pa.

Malcolm H. Baehr, The Texas Co., New York.

Ernest Case, Akron Post Office, Akron, Ohio.

Mrs. Myrtle S. Huard, Amarillo Air Force Base, Tex.

Steve C. Filut, Milwaukee Rd., Milwaukee.

Lois McCarthy, Kraft Foods, Pocatello, Idaho.

Lane Delarme, International Paper Co., North Tonawanda, N. Y.

Jesse H. Long, John Sevier Steam Plant, Rogersville, Tenn.

Robert T. Gidley, Dallas, Tex. (Individual Member)

Robert S. Martin, Rochester, Minn. (Individual Member)

E. W. Andersen, Hercules Powder, Hattiesburg, Miss.

Mrs. L. B. Thompson, Jersey Central P. & L. Co., Asbury Park, N. J.

E. H. Vanwinkle, U. S. Rubber Co., Wilmington, Ill.

J. D. Grace, Nordberg Mfg. Co., Milwaukee.

Warrick E. Lee, Bell Telephone Co., Carbondale, Pa.

Les Raymond, Jr., A. O. Smith Corp., Milwaukee.

Earl McCoy, National Gypsum Co., Luckey, Ohio.

E. Pysher, Alpha Portland Cement Co., Petersburgh, N. J.

A. E. Falvey, Minerals & Chemicals Corp. of America, Milledgeville, Ga.

Bror Anderson, A. B. Dick Co., Park Ridge, Ill.

A. F. King, Du Pont Co. of Canada Ltd., Brockville, Ont.

William Campbell, U. S. Coast Guard, Boston.

Industries to Build Nuclear Reactor

TEN OF AMERICA'S large corporations have formed a new company, Industrial Reactor Laboratories, Inc., to build and operate a privately owned nuclear reactor for industrial research in atomic energy at Plainsboro, N. J.

The companies participating are Atlas Powder Co., AMF Atomics Inc. (Subsidiary American Machine & Foundry Co.). American Tobacco Co., Continental Can Co., Corning Glass Works, National Distillers Products Corp., National Lead Co., Radio Corp. of America, Socony Mobil Oil Co., and United States Rubber Co.

Each participant is represented on the new company's board of directors, which will be headed by Gen. Walter Bedell Smith, president, and H. L. Hilyard, vice-president. General Smith is chairman and president of AMF Atomics Inc. Mr. Hilyard is treasurer of the American Tobacco Co.

Experience is what you get when you're looking for something else.

McDonald
DUSTFOE Airline RESPIRATOR

- Approved for protection over prolonged periods against harmful or objectionable atmospheres containing welding or cutting fumes, paint spray vapors, fumes from burning metals and toxic dust.
- Dustfoe facepiece cushion provides a comfortable gas-tight fit with a minimum of adjustment—can be worn under welding helmet.
- Small, compact, lightweight. Does not impair vision. Non-kinking air hose—air flow control valve easily adjusted for proper flow to wearer.

Write for Bulletin and Prices

B·F·McDonald COMPANY
Manufacturers & Distributors of Industrial Safety Clothing & Equipment

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THE SAFE WAY . . .

For car stops, on loading platforms, temporary sidings, cars on grades and traveling cranes. Used and recommended by leading Steel Companies, Manufacturing Plants, Mines, Grain Elevators, Cement Plants and Quarries.

WRITE FOR BULLETIN NO. 4

IPCO *Safety Equipment for all Industries*

INDUSTRIAL PRODUCTS COMPANY

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SAFETY FIRST

that's built to last . . .

IR SPARK-RESISTANT

paving breaker tools of FORGED beryllium copper

WHEREVER sparks mean DANGER, you can play it safe — and still get maximum tool life — with I-R Spark-Resistant Paving Breaker tools. That's because they are FORGED — not merely cast — of special, high-strength beryllium copper alloy. A trial order will quickly demonstrate their superiority.

Write for Bulletin 4173

5-390

Ingersoll-Rand

11 Broadway, New York 4, N.Y.

Back the Attack!

—From page 18

again into the future. What do we see now?

I see, first of all, a development many of us overlook—the fact that the very enormity of this traffic toll is fast approaching a point where it will of itself shock the American people into action to reduce it.

The history of our nation proves that while our people may shrug off potential danger with a show of indifference, they have never failed to move and move swiftly and powerfully when danger really strikes. Can anyone contend that death and danger on the highway are not reaching the point of a national emergency that calls for action by everyone, just as would war, flood or other disaster?

I believe the day is nearer than we think when the very size of the traffic toll will be a powerful influence in shocking the American people into drastic action. In fact, I am sure the public is more safety-conscious today than at any time in safety's history—and becoming more and more aroused as the toll increases.

I see this aroused citizenry uniting in local safety groups to pool their demands for a stop to this slaughter that threatens their families and security.

I see them demanding and supporting and accepting the kind of traffic law enforcement that will rid the highway of the unfit and curb the thoughtless behavior of the driver who endangers others.

I see the citizens insisting upon better and safer highways—and demanding immediate action in building them.

I see new developments in engineering design that will make these new highways so danger-proof that only the most willful driver can make them dangerous.

I see improvements in our existing roads and highways that will make them safer and easier to use.

I see an ever-swelling tide of public education that will reach this receptive public with new and even more effective safety propaganda through every medium.

Even now we are about to launch a hard-hitting, continuing traffic safety program to be known as "Back the Attack," which we believe will provide the most comprehensive and effective means yet devised of obtaining united and sustained action by public officials and by citizens against traffic accidents.

This campaign will have two simple goals. One is to encourage public officials to step up the attack on traffic accidents. The other is to stimulate private citizens to back the attack both individually and through organized effort.

The campaign is to be launched in December, with an immediate goal to meet and reduce the usual year-end dangers of holiday rush and conviviality and the hazardous weather conditions of darkness, sleet, snow, ice and fog. But the campaign will continue throughout 1957.

This nation has now charted a bold and vigorous course which will double the rate of construction of new streets and highways within the next 10 years.

But along with this advancement, America must perceive the need for doubling all the elements of our attack on highway accidents—and be willing to pay for it!

Yes, I said *double!* We have been too complacent when we raised the safety activities of a state or community to a level needed 10 years earlier. We have been so happy over "some progress" that we have settled for half enough.

It is "half enough" that will permit the slaughter of more than 41,000 people on our highways this very year.

I see, too, more and more public response to the tremendous impact of safety advertisements. Advertising sells everything we use in this country. It certainly can and does sell safety. The current Stop Accidents Campaign being conducted by The Advertising Council on behalf of the National Safety Council is, all of us feel, the most vigorous and effective of any that have been waged in the 11 years of the campaign. And it is receiving the greatest acceptance by media any such campaign has ever obtained. *(—Turn page)*

HUNDREDS OF PLANTS SOLVE PROBLEM OF SKIN INJURY

"Kerodex" Offers Truly Effective Protection Against Skin Irritants

Irritation from epoxy resins and amine hardeners, "dope," solvents, cutting oils, and many other highly damaging substances is no longer a problem when "Kerodex" prevents contact with the skin. Hundreds of plants find "Kerodex" successful where other barrier creams fail.

"Kerodex"® spreads on easily and acts like a glove that is invisible yet strong and flexible. Does not smear. Does not affect materials handled nor is it affected by them. Available in two types. For full information write to Ayerst Laboratories, 22 East 40th Street, New York 16, N. Y. 5670A

Amazingly COOL HEAT VENTILATED REFLECTOR

NEW MODEL 55-VCX-701 FOSTORIA LOCALITE

FINEST OF ALL LOCAL LIGHTING UNITS

$8.97 EACH In Std. Pkg. of 4

MARVELOUS NEW SEEING TOOL

Frictional arm and collar disc joints give flexibility of a thousand positions to direct light exactly as wanted. Rugged construction with heavy duty industrial socket, Levolier switch and universal base.

INNER SHIELD ACCESSORY for extreme coolness when using 100 WATT lamps.

WRITE for complete catalog of Localite Models for every industrial use.

THE FOSTORIA PRESSED STEEL CORPORATION, FOSTORIA, OHIO

Localites are available through wholesalers everywhere

LOCALITE fostoria for Light ON the Job

Got
DUST STORM THROAT?

YOU NEED A . . .
DUPOR No. 4

The respirator that's made to order for protection against dust, fumes and paint spray! Has everything, and more than you will find in units costing twice the price! Double filters; soft rubber face mask; sanitary face cloth; exclusive Dupor valves for controlled breathing; panorama vision! Economical protection that you cannot afford to be without! Write for sample, $2.00 postpaid!

H. S. COVER, P. O. Box 2508, South Bend 14, Ind.
"Respirators for Industry since 1894"

FOOT-TOE-LEG Protection by "Sankey"

"SANKEY" IMPROVED FOOT GUARD

The metal shield (above) is designed to furnish a maximum amount of protection to the entire front of the foot—not merely the toes alone, but also to the instep against hazards from falling, rolling or flying objects, or from accidental tool blows.

- Absolute freedom of leg motion, utmost protection and comfort come with the leg-contour shaped "Sankey" fibre shin guard (right).
- Fibre knee-shin guard (right) provides flexible knee movement on jobs with both knee and shin hazards.

For more information write today
ELLWOOD SAFETY APPLIANCE CO.
225 SIXTH ST.,—NSC ELLWOOD CITY, PA.

It is beamed straight at the citizen with a powerful appeal for his support of rigid traffic law enforcement and of his local safety organization. He is asked to help start a local organization if there isn't one in his community, or to join and support one if there is.

I see along with this the powerful impact of the National Safety Council's own public information program growing greater and greater. Acceptance of our material by media of every type is truly amazing. And public information programs of many other fine organizations interested in safety are doing a magnificent job, too.

I see the activities generated by the President's Committee for Traffic Safety and by the National Safety Council's field service staff spreading throughout the nation, state by state and city by city. I see the interest and enthusiasm inspired by the four regional conferences held under the direction of the President's Committee bring about more and more organized safety effort on the state and local level, where it is so badly needed.

All these things I see as I look into the future, and in them I rejoice.

And what do I see resulting from all this effort?

I see an aroused and awakened America waging an all-out war on accidental death and injury just as it has on smallpox and yellow fever and diphtheria and other scourges which became too terrible to tolerate, and therefore were beaten down.

I see this new war fought with a truly war-time fervor and zeal that we have never seen before in safety.

I see, in this new war, alarm succeeding apathy, indignation replacing indifference, firmness crowding out futility. I see a nation that knows no result but victory when once it wages real war —turning its might against an enemy that has taken the lives of more Americans on the highway alone than all foreign enemies have claimed on the battlefield in all the wars America has ever fought!

I see in this new war on acci-

dents industry paired with labor, business teamed with school, farm aligned with city, men and women of all ages, races and creeds joined together in the common cause of routing a scourge that has hit at everyone of every race, creed and level of society. Accidents are no respectors of persons. They strike us all. They are truly a common enemy!

I see organized, continuing, planned and effective effort replacing well-intentioned but spasmodic safety drives by the unorganized few.

I see every boy and girl carefully and expertly taught to be a skillful, careful, courteous driver before he or she is permitted to get behind the wheel in traffic.

I see churches of every denomination, faith and creed uniting in a mighty crusade to make "Thou Shalt Not Kill" the commandment of the highway and to make every man behind the wheel his brother's keeper. That, my friends, is practical religion!

All this I see—and more—as I peer into the future, not only with realism and logic, but with faith and courage and hope.

Fantastic, you say? A dream? A completely impractical dream?

No, my friends, it is no dream. It cannot be a dream. Either it is real, or we are ready to admit that a country which has never failed to meet a crisis is now about to fail.

Either it is real, or we are saying that America, where human life is our most precious commodity, is now so callous and cold that a staggering and needless toll of dead and injured is regarded as inconsequential and unworthy of concern.

No, my friends, this is no dream.

Already we possess the techniques that can prevent accidents. It is the widespread *application* of these techniques we must obtain.

What we need now is war-time fervor to fight the war on accidents—the same fervor and united effort America has put into every other war.

America has always been able to get what it has wanted if what it wanted was right and proper.

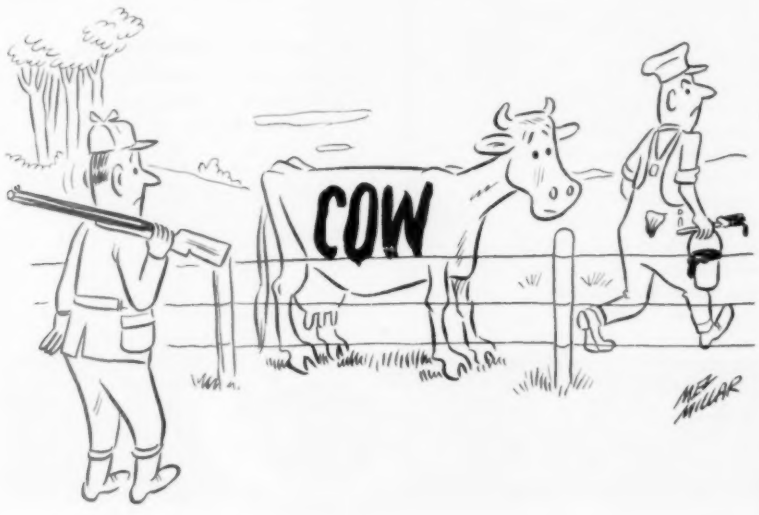
Safety *is* right and proper. Freedom from accidents is a worthy aim. America can have it if it really wants it.

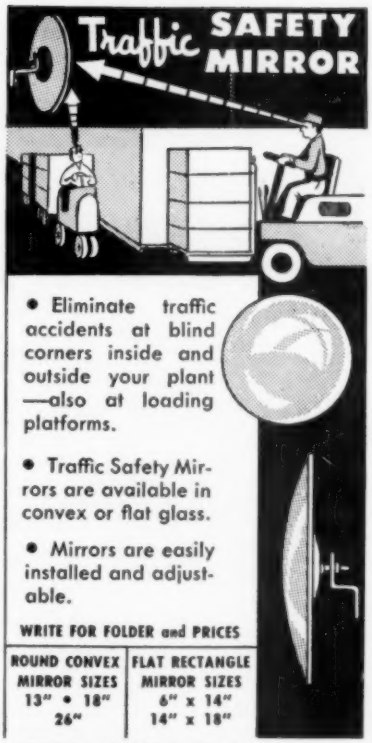
Let us, then, in a spirit of humility but with confident determination reject any idea of futility in this war on accidents. Let us scorn any suggestion that this problem is too big to solve.

Let each and every one of us resolve to make 1957 the year that the war on accidents takes a turn for the better and heads for victory.

America has never lost a fight. With new spirit, new fervor, new confidence and hope and faith, and with God's help, it will not lose this one!

Puritanism—the haunting fear that someone, somewhere, may be happy.—*H. L. Mencken.*




Traffic SAFETY MIRROR
• Eliminate traffic accidents at blind corners inside and outside your plant —also at loading platforms.
• Traffic Safety Mirrors are available in convex or flat glass.
• Mirrors are easily installed and adjustable.
WRITE FOR FOLDER and PRICES
ROUND CONVEX MIRROR SIZES 13" • 18" 26"
FLAT RECTANGLE MIRROR SIZES 6" x 14" 14" x 18"

FRED SILVER & Company

Mfgrs. of Specialty Mirrors for Industrial Use

92 Lock Street Newark 4, N. J.

Injured's head can be securely immobilized with new stretcher

Here's another use for the versatile new Haggard's all-purpose stretcher kit. No matter what type of stretcher you now have, you have need for the new Haggard. It does all the things any stretcher can do, plus many more. It is a complete unit ready for instant use anywhere. It is so compact that it fits into a car trunk. Lightweight, only 28½ pounds complete with case, blanket, first aid supplies, and accessories. It's such a totally new concept in utility, versatility and practicality that you should investigate it at once. See how easy it is to store, transport, and put to use. See all the advanced, needed features that make it a combination litter, fracture board, traction splint, and resuscitator. Compact, convenient, complete. Ask your MSco distributor for a demonstration or write Medical Supply Company, Rockford, Illinois. In Canada, Safety Supply Company, Toronto 2.

CARING FOR WAXED FLOORS IS . . .

A cinch with Sanax

It waxes as it cleans!

REDUCES THE FREQUENCY OF REFINISHING

Sanax was developed to permit frequent cleaning of waxed floors *without washing away the finish* . . . and to eliminate waste in wax and labor. A neutral liquid soap with a wax base, *Sanax* not only quickly removes dirt, oil, and grease, but *leaves a thin film of wax.* In fact, regular use of *Sanax* to machine-scrub or damp-mop waxed floors *actually prolongs the life of the finish,* and thereby reduces refinishing costs on a year-to-year basis.

Like all *Finnell Fast-Acting Cleansers, Sanax* is specially designed for the greater speed of machine-scrubbing, and works as effectually in a *Combination Scrubber-Vac* as in a *Conventional Scrubber-Polisher.* And because *Sanax* is processed from pure vegetable oils, it's *safe for all floors.*

A 100 Series General-Purpose Finnell 11, 13, 15, 18"

Find out how you can simplify and reduce the cost of caring for waxed floors. *There's a Finnell Floor Specialist nearby* to help you choose the waxes and cleansers that are *exactly right for your needs. Finnell* makes a complete line, so you can depend on unbiased advice. In fact, *Finnell makes everything for floor care!* For consultation, demonstration, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2211 East Street, Elkhart, Indiana. Branch Offices in all principal cities of the United States and Canada.

- **A mild liquid wax-soap for machine-scrubbing or damp-mopping waxed floors**
- **Leaves a lustrous anti-skid protective finish**
- **Highly concentrated . . . economical to use**

FINNELL SYSTEM, INC.

Originators of Power Scrubbing and Polishing Machines

Everything FINNELL for Floor Care

BRANCHES IN ALL PRINCIPAL CITIES

NEW SAFETY EQUIPMENT

Further information on these new products may be obtained by writing direct to the manufacturer or by circling the corresponding item number on the Reader Service Postcard.

Fiber Glass Safety Hats and Caps

Greater comfort and more durable construction characterize the new headgears now used in these fiber glass safety hats and caps. This headgear, adjustable by clearly marked hat sizes, has the hammock straps and sweatband assembled in one unit, with nylon cord providing the required adjustment over the top of the head.

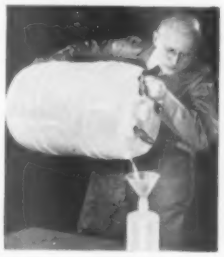
The polyethylene tenite headband retains its strength and flexibility under high and low temperatures, is low in moisture absorption and highly acid resistant.

The sweatband is made of soft lined leatherette and goes entirely around the head.

Jackson Products, Inc., 31379 Mound Rd., Warren, Mich. (Item 1)

Polyethylene Drum

A 13-gal. polyethylene drum, barrel-like in appearance and construction, is an addition to this company's line of 5-, 6½- and 13-gal. carboys.



The heavy-duty container features two folding handles, a pouring spout, a separate opening for filling and venting, a handgrip on the bottom, and strengthening ridges that permit the drum to be rolled on its side.

Colored folding handles and filling and pouring necks are located in a recessed area on top of the drum. Top and bottom contours are convex to permit the containers to nest securely one on top of the other.

The drum is lightweight, inert to corrosives and unbreakable.

Plax Corp., 672 Farmington Ave., Hartford, Conn. (Item 2)

Multi-Pak Air Filter

The Multi-Pak air filter is designed particularly for the "high efficiency" field and is suitable for operating in chemical plants, pharmaceutical laboratories, film, optical and electronics manufacturing plants, atomic energy installations, etc.

It is a dry type air filter for applications where air filters of standard construction are necessary but need higher than normal cleaning efficiencies. Filter materials can be varied from cellulose fiber sheets to dense glass fiber mats. A variety of thicknesses, densities, and textures make it possible to obtain any desired efficiency in dust and smoke removal from plant pollen to tobacco smoke even at extremely high temperatures. There are more than 50 sq. ft. of media in the seven "pockets" of one 2 ft. x 2 ft. x 22¾ in. unit.

American Air Filter Co., Inc., 215 Central Ave., Louisville 8, Ky. (Item 3)

Silicone for Leather

Workers who slosh through water, and acid and alkaline solutions on their jobs may now have greater safety by using Sylflex, a new silicone for leather.

The silicone offers water repellency without clogging the leather's pores. It is said to make safety shoes even safer because workers wearing leather shoes with Sylflex can walk through water and acid solutions without getting their feet wet.

Sylflex is applied in the tanning process, penetrates through the leather, and surrounds the individual fibers, causing them to repel water and water-borne chemicals. It does not clog the spaces between fibers, which would give the leather a plastic-like feeling and make it uncomfortable to wear.

Dow Corning Corp., Midland, Mich. (Item 4)

First-Aid Station

A first-aid, wall-mounted cabinet, small enough for use close to hazardous areas is large enough to hold necessary first-aid items.

The cabinet is especially useful where fast, immediate first aid treatment must be given.

Each of the cabinet's two doors is fitted with a positive-action catch that cannot open as a result of nearby vibration, making the unit useful

in difficult locations. Other important safety features are the rounded-corner construction and flush chrome hardware.

The cabinet is finished in durable, white, baked-on enamel and is 20x24x11 in.

General Scientific Equipment Co., 7516 Limekiln Pike, Philadelphia 50. (Item 5)

Ear Protection Headphones

To help combat hearing loss due to industrial noise, these ear protectors with phone communication headphones perform two functions: They protect the wearer from harmful noise and they provide instant and clear communication, even in an extremely noisy area.

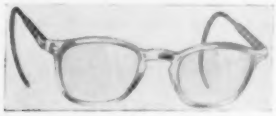
According to the manufacturer, the phone-equipped headset provides the same ear protection as its standard noise protection devices, and is easy to wear and easy to put on and remove. Additional safety is a by-product of the phone-equipped "Noisefoe," as clear communications can often prevent accidents caused by orders that are misunderstood.

The phone receivers do not interfere with the firm acoustical seal which the soft, spongy ear cushions provide. The suspension type headset is equipped with a standard jack, which can be connected to intercommunication systems, telephones, radio systems, or other circuits.

Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa. (Item 6)

Plastic Frame Safety Spectacles

Greater comfort, attractive styling, and increased vision are featured in these new plastic frame safety spec-



tacles. The square-shaped lenses provide great visibility, and the colored Butyrate frame is rugged and light weight. The frames are available in copper, cordovan, and crystal pink.

The lenses are either heat-treated glass or CR-39 plastic and come in clear or green.

Welsh Mfg. Co., 11 Magnolia St., Providence, R. I. (Item 7)

Dust Collector

Cyclone-type dust collectors featuring connections to standard 55-gal. drums are for use in tire-recapping plants, woodworking shops, and other installations where large volumes of bulky, sticky dust are created.

The series 55 collectors have exhaust capacities ranging from 1,000 to 1,100 cfm. at speeds in excess of a mile a minute. The collectors feed directly into standard 55-gal. (or smaller) drums, which can be quickly removed and replaced when full.

The collectors can be used wherever machinery creates quantities of dust, buffing lint, chips, or shavings might tend to clog standard filters.

They are easily installed, stand on a sturdy four-legged frame and have an air-tight flexible shield that connects to the top of the drum.

The unit is 104 x 32 x 32 in. and weighs from 440 to 510 lbs.

Torit Mfg. Co., Dept. KP, 287 Walnut St., St. Paul 2, Minn. (Item 8)

Hard Hat Winter Liners

These liners are designed to protect men who work outdoors in the winter. Five different models are available and all may be used with any make or style of safety hat or cap.

The liners are made from heavy-duty, tightly-knit, water-repellent drill material and are lined with a strong, double napped, fire resistant flannel. All material, both inside and out is vat dyed, nonfading, forest green. The materials are sanforized and lock-stitched to prevent ravelling and assure months of service.

They are available without earlaps in medium and large. Fabric liners snap over the sweatbands, holding safety hats and caps in place.

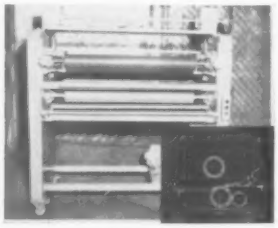
The winter liners are made in three styles: the snug fitting skull cap; the skater's type which covers the ears; and the Arctic, which covers the entire head, face, neck and nose leaving only the eyes exposed.

E. D. Bullard Co., 275 Eighth St., San Francisco 3. (Item 9)

Safety Release Handle

This safety feature for roller coater operators is now standard on heavy-duty roller coaters.

The feature incorporates a release handle that runs the full width of the roller coater and is located immediately in front of the operator. In the event the operator catches his hand in the machine, or should an emergency of any nature arise, the operator depresses the safety release handle.



This operates a latch pin which releases the complete lower roll assembly—including rolls, infeed table, pick-off fingers and supply pan. The assembly rotates forward and down, creating a space between the upper and lower rolls. The complete operation is said to be virtually instantaneous.

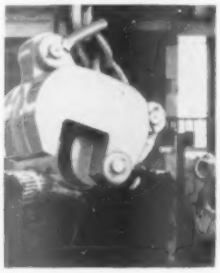
To reset the lower roll assembly, the operator uses a wrench to turn a cam bar located on the side of the machine. The cam bar is turned until the assembly contacts stop, at which point the spring-loaded latch pin automatically engages, locking the assembly in operating position. The fixed stop eliminates any need for readjustment of the lower roll assembly after the latch pin has been engaged.

The Union Tool Corp., 800 N. Detroit St., Warsaw, Ind. (Item 10)

Steel Plate Lifting Clamp

The "Never-Slip" safety clamp is said to be the largest and strongest steel plate lifting clamp of its kind, and is designed to safely lift a load of 80,000 lbs.

The illustration indicates the size of the clamp compared to a conventional clamp which will lift 1,000 lbs. Both clamps operate on the same principle. When the jaws are applied to the load, they are relaxed,



but as the hoist begins to ascend the jaws close with a firm gripping action. The semi-automatic cam action on the serrated-steel jaws is a vital feature because the grip is directly proportional to the load.

Kensico Mfg. Co., Mount Kisco, N. Y. (Item 11)

Safety Hat Liner

Eight-point uniform hats may now be equipped with a safety hat liner. The "Nesmo" liner can be sewn into the hat by the hat manufacturer. The liner is a shaped crown of tough plastic designed to fit any eight-point uniform hat.

The crown is held in place inside the hat by an attached anchor strap which tucks in behind the sweatband. A foam rubber pad centered in the underside of the crown cushions against any sudden impact with an overhead object.

Duggan Safety Products Co., 28 W. Hamilton Ave., Englewood, N. J. (Item 12)

Welding Helmet

A narrow, deep design welding helmet with a lift-front lens holder is designed for easy access to work in close quarters.

Model 668-9 is light weight, and has a "Dowmetal" lift-front glass holder which is insulated on the inside of the helmet. The helmet is equipped with a wide range ratchet adjustment to fit all head sizes and has two positive stops, two position joints to equalize movement, and a padded sweatband for comfort.

The helmet is formed from a flat sheet of fiber with deeply lapped seams. It is sealed by oversize rivets, and no protrusions extend outside the helmet to hamper the welder.

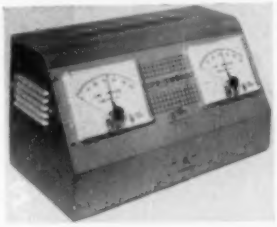
The Fibre-Metal Products Co., Chester, Pa. (Item 13)

Chemical and Mechanical Monitoring Control

A line of industrial controls providing automatic and flexible monitoring and control of virtually any electrically measured chemical or mechanical condition has been announced.

Such functions as voltage, current, torque, timing, pressure, temperature, liquid level, speed, depth, light, sound, and deflection can be controlled.

Sensitivities begin with zero to five microamperes or zero to five millivolts. Normally, the units operate on direct current but in most cases they can be adapted to ac.



Depending on the circuitry, the units will initiate desired control action either when an increasing or decreasing signal reaches a preset point. Units are also available with both high and low limits. The controls are the indicating type, calibrated in whatever units are applicable, with one pointer giving a continual reading from the signal of the operation being monitored.

A second pointer may be turned to any place on the dial—usually a 95° scale arc—to fix the allowable signal limit. Control accuracy is held to within two per cent of dial settings.

Either on-and-off or locking (shut-off) control action may be selected. The controls are available in either single or multi-meter models, depending on whether one or several signals must be monitored to provide complete control.

Tipp Mfg. Co., Tipp City, Ohio. (Item 14)

Automatic Dock Board

"Hi-Lo" automatic dock boards have been redesigned to allow easier installation, smoother operation, and greater safety.

The cross traffic lock which supports the ramp in dock level position has also been completely redesigned. Included is a positive safety stop which prevents free-falling of the dock board if a truck should pull away leaving the lip unsupported.

The single, sliding-type operating arm, furnished on previous models, has been replaced with two adjustable arms which pivot on the front cross beam.

The Kelley Co., Inc., 316 E. Silver Spring Dr., Milwaukee 17. (Item 15)

Fire Alarm and Sprinkler Supervisory System

This fully automatic fire detection and sprinkler supervisory system without mechanical code transmission has been granted class A proprietary rating by the Underwriters' Laboratories.

The proprietary system consists of several recent inventions and developments including: a remote station receiving panel listed by UL; PN-02 series control panel which provides automatic fire protection;

an automatic circuit; an emergency automatic signal receiver and signal transmitter; a master code control for positive non-interference and control of signals, and permanent recording equipment which automatically records signals received from the master code control, giving the numbers of rounds of signals received, code of signal received, and stamps time and date of the receipt of the signals.

Notifier Corp., 239 S. 11th St., Lincoln, Neb. (Item 16)

Safety Multiple Lock-Out

Severe injuries, costly damage to equipment, and work spoilage may occur as a result of failure to properly lock out electric power sources used by electricians, maintenance crews, etc.

This safety multiple lock-out is for power sources, electric switches, fuse boxes, etc. When two or more men are engaged on a power repair line or power source, each workman engages his padlock in his assigned one of six holes in the multiple lock-out. When the last workman removes his padlock, the lines are clear and the power source can be engaged.

The unit is fabricated from cold rolled strip steel and is case hardened and plated.

Dayton Rogers Mfg. Co., 2824 - 13th Ave., S., Minneapolis 7. (Item 17)

Ventilated Reflector Lamps

Model 55-VCX-701 Localite has a reflector which automatically ventilates the lamp heat to keep the reflector cool. An inner reflector shield accessory is also available for extreme coolness when using 100-watt lamps.

The lamps are designed with adjustable frictional arm and collar disc joints which provide the flexibility to direct light exactly as wanted on machine tool, assembly, and inspection operations. They are equipped with a heavy-duty, industrial socket Levolier switch, SPT-2 18/2 heavy duty plastic rip cord wiring with molded plug, and a universal base for machine or bench mounting.

The Fostoria Pressed Steel Corp., Fostoria, Ohio. (Item 18)

Emergency Flashing Lantern

A powerful, red-flashing warning light has been developed for use by

airports, docks, municipalities, quarries, mines, oil fields, and construction industries to mark obstructions, repair areas, or danger zones.

Visible for one mile, the "Radar-Flash" is powered by a two-in-one dry battery incorporating two six-volt lantern batteries wired in parallel. The light-head attaches to the unified battery-and-case with two simple screw caps; no wires or spring contacts are needed to make the electrical circuit. The silver contact switch is at the base of the red-flashing light.

Burgess Battery Co., Freeport, Ill. (Item 19)

Mobile Air Monitor

Fixed or moving filters are featured in this mobile air monitor that automatically measures and records airborne radioactivity and warns by light and bell when preset limits are exceeded.

Model AM-3A air monitor, is designed for protection of personnel wherever radioactive materials are handled. It detects the maximum permissible concentration of airborne beta and gamma activity as specified in National Bureau of Standards Handbook 52.

The unit will operate unattended for seven to 10 days, providing a permanent record of radiation levels on a continuous chart. It can follow either short-term, high-level radioactivity, or more slowly changing, low-level radioactivity. Airborne particles are collected on a filter which may be operated as a fixed filter to provide an accumulative record, or as a continuous moving filter with speed choices for showing instantaneous changes.

The unit includes a variable air flow, positive displacement pump, high stability count rate meter, variable speed chart recorder and a two-in.-thick lead counting chamber.

Nuclear Measurements Corp., 2460 N. Arlington Ave., Indianapolis 18. (Item 20)

Sand Blast Hood

Number 30 sandblast hood protects workers under moderate blasting conditions. The hood is light weight, comfortable, and has a fiber head frame and an adjustable and replaceable hammock assembly.

The hood is available with wire screen windows or laminated glass with a wire screen shield.

Pulmosan Safety Equipment Corp., 644 Pacific St., Brooklyn 17, N. Y. (Item 21)

Gas Valves

Fast closing and slow opening are features of these UL and Factory Mutual approved series 81L automatic gas valves.

For use with Fireye flame safeguard systems, the motor-operated valves have a powerful compression-type spring that automatically shuts off fuel in 0.8 of a second. A special heavy-duty electric drive unit controls the rate of opening to reach 75 per cent of maximum fuel flow in six seconds.

Another feature is the availability of a position indicating switch, which performs as a safety interlock. If, prior to lighting off a burner, the valve is open a fraction of an inch, the switch will not allow the light-off to take place. Instead, the electric circuit to the burner control will remain off until the valve is completely closed.

In case of flame failure or loss of electric power, or on operation of limit switches or other interlocks in the burner control circuit, reliable closing of the valves is assured by two proved principles of construction. One is the "double safeguard" release, wherein either of two independent releases will trip the valve. The second is a new "shearing action" by the valve disc, which literally cuts through dirt or scale on the valve seat.

The valves are available in sizes from one to six in. and higher capacities and lower pressure drops are achieved in each by full area port and straight-through body design.

Electronics Corp. of America, Combustion Control Div., Dept. CN-12, 77 Broadway, Cambridge 42, Mass. (Item 22)

Rail Car Loading Platform Table

A portable magnesium platform table has been designed for use with this manufacturer's mobile loading ramp to permit parallel loading of rail cars where trackside space is limited.

Once the platform is positioned by a lift truck at car door opening, the loading ramp is locked in place at the side of the platform, parallel to the track and a dock board bridges the gap between the platform floor and the car entrance.

The edges of the platform are equipped with safety curbs to prevent power truck run-off and eliminate tire damage. The safety curbs are removable, permitting parallel loading from either side of the rail car.

Special diamond-tread, reinforced floor plate increases safe traction. The unit is engineered for load capacity up to 16,000 lbs.

Magline, Inc., 1900 Mercer St., Pinconning, Mich. (Item 23)

Shutoff and Alarm For Heating Processes

This shutoff and alarm for automatically controlled processes requires no sensing elements or electronic circuitry.

The Damol impulse monitor provides safe shutdown of the process and sounds an alarm in the event of controller failure in the "on" period and an alarm in the event of abnormal "off" period or fusing of the power contractor.

The absence of sensing elements, such as thermocouples and thermobulbs, and electronic circuitry is said to assure positive, dependable operation with no possibility of failure from added components.

Although the present models are designed primarily for heat treating furnaces, the principles of the monitor can be applied to any process involving heat, pressure, or flow where the control system uses an on-off, two position or pulsing type of control mode and where the input is of reasonably uniform duration.

The operation of the monitor is a direct function of the signal from the automatic controller. It continually monitors the input to the control process and acts instantly to shut down the process and sound an alarm when an abnormal condition arises. It can be wired to operate an external alarm circuit or to signal failure over telephone lines or protective agency equipment.

Three models are available.

Damol Corp., 541 Land Title Bldg., Philadelphia 10. (Item 24)

Liquid Level Gauge

The face of the scale of these liquid level gauges lights up and flashes red continuously to warn when the liquid level is too high or too low.

When the liquid level is safe, the scale is illuminated with two 15-watt bulbs, one in either end. When the alarm points are reached the whole scale is brightly lit in red by a large bulb in the center which flashes continuously until the dangerous condition is corrected.

The gauges give instant remote reading of liquid levels of boilers, tanks, etc. with an accuracy of one-half of one per cent of scale reading. The scales have convex faces, with the scale marking directly on the face, giving 180° visibility.

The scales may also be equipped with signal horns, lights and up to six repeaters, so they can signal the entire operating floor as well as other remote points.

Jerguson Gage & Valve Co., 80 Fellsway, Somerville 45, Mass. (Item 25)

Water Wash Spray Painting Booth

Style "D" spray painting booth is for normal industrial production. According to the manufacturer, it meets the requirements of fire, health, and state authorities.

The booth is specifically designed for plants which require a good, low-cost, approved exhaust system for general use. Overspray and fumes for painting operations are drawn through two separate thorough washing operations. The velocity of the air passing through the wash chamber never exceeds 600 fpm. and, as a result, utilizes the full efficiency of the water action. This scrubs the atomized paint pigment and vehicle from the air and deposits them in the collecting pan.

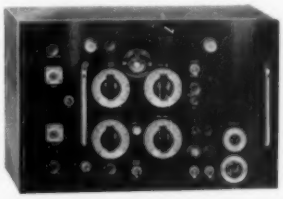
The cleaned air then passes through a series of staggered arrestor plates which remove free moisture before the air is exhausted to the outside. As a result, fire hazard is said to be greatly reduced.

Features of the booth include low operating costs and ease of maintenance. The booths are furnished in standard sizes from 4 to 20 ft. wide and from 7 to 12 ft. high.

Binks Mfg. Co., 3122 Carroll Ave., Chicago 12. (Item 26)

Electronic Radar Monitoring Device

The "Raytector" is an electronic device that automatically monitors or watches radar and sounds its own warning alarm when an object is sighted.



The "Raytector" operates only on the video input signal of the radar set and therefore does not interfere with the radar's normal operation. It carefully manages to sound its alarm only when a real object or target has been sighted by the radar. It rejects all extraneous disturbances such as incidental white flecks, snow, etc. It also distinguishes be-

tween true echoes and false echoes caused by momentary, false targets.

It also selects and limits its own operation to specific search ranges and areas determined by the operator, rejecting all echo signals from nearer zones or ranges beyond the desired search limit.

As an added safety feature, the device provides for its own failure, or the failure of the radar equipment itself, by setting up an automatic alarm if either apparatus fails to function.

Miller Associates, P. O. Box 369, Lakeville, Conn. (Item 27)

Chemical Ice Melting Pellets

Extension of the thawing range of Ice Melter — chemical pellets for melting ice and snow—makes them effective at critical temperatures where some ice-remover products are relatively ineffective. The pellets are said to have up to 30 to 36 times the thawing capacity of salt at immediately above zero and far below zero.

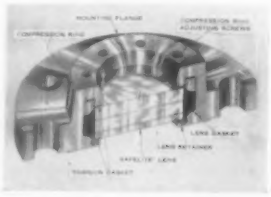
The chemical pellets generate heat and start melting action when sprinkled on icy surfaces. They are recommended for use on loading docks, walks, steps, and roadways. They are also useful under the vehicle tires.

The product is said to be harmless to vegetation, driveways, sidewalks, shoes, and tires. It is suitable for use with mechanical hand spreaders or truck-mounted dispensers.

Revere Chemical Corp., University Center Station, Cleveland 6, Ohio. (Item 28)

Pressure Vessel Lens and Mounting

A patented lens and mounting is a sight glass for pressure vessels. The device is equipped with "Safelite" lenses and consists of two pressure discs and one shielding disc positioned in a flanged body, with non-extrudable, top-and-bottom cushion gaskets. This is in turn surrounded by special packing which eliminates undue stress on the glass itself and the risks taken when the flange bolts are tightened.



"PresSure" (the product's name) can be shielded for acids, including hydrochloric acids, and caustics, chemicals and other fluids, vapor attack, and nuclear radiation.

The sight glass may be specified as standard on new equipment, or it can be easily adapted to equipment now in use.

PresSure Products Co., P. O. Box 424, Charleston 22, W. Va. (Item 29)

Safety Skull Caps

No. 75 is a safety skull cap for use in close quarters, where head bumps and lacerations are a problem. An elastic band worn low on the back of the neck instantly adjusts the cap to any head. The cap is light weight and comfortable and has a padded removable sweatband.

It is particularly adaptable for use in grease pits, under conveyors, and on many operations where there is low headroom.

The Boyer-Campbell Co., 6540 St. Antoine, Detroit 2, Mich. (Item 30)

Non-Caustic Detergent

This all-purpose cleaning agent is applicable to all types of plant, marine, and automotive operations. The safety cleaner is said to reduce the hazards encountered in metal degreasing, paint stripping and cleaning of soft metals, hard metals, ceramics, wood, etc. Called "Nocaust—NC 200," it is a clean, dustless, free-flowing powder. While highly alkaline, it contains no free caustic or inert material.

The manufacturer states that it is non-injurious to metals, wets out dirt, emulsifies, prevents redeposition of soil, deflocculates, and maintains a constant pH over a wide range of concentrates.

The product can be mixed with water to varying degrees and can be used safely in all types of plant operations where oils, resins, paints, etc. must be completely removed from all kinds of surfaces.

John B. Moore Corp., Nutley 10, N. J. (Item 31)

Pole Testing Device

The "M-Pact-O" pole sounder is an impaction tool for testing the safety of poles.

Linemen may now test the safety of every pole they must climb. The tool penetrates in the pole six in. below the surface of the ground, and the operator can tell if the pole is rotted by the vibration felt in the impaction handle. A reciprocating motion of the weighted handle drives the shaft into the ground and into the pole. It is useful as a safety device for maintenance of electric lines, railroad telegraphs, and telephone lines.

Engineers Tool Co., 116-118 W. Main St., Lake City, Iowa. (Item 32)

NEWS ITEMS

Ansul Chemical Co. has purchased the building of the Marinette Glove Co. in Marinette, Wis., for additional manufacturing and office facilities. The new building will add 11,000 sq. ft. of floor space to their present plant facilities.

Ansul is a producer of dry chemical fire equipment and also makes industrial and refrigeration chemicals.

Macwhyte Company, manufacturers of wire rope, has announced that Russell J. Whyte has been appointed field sales manager. For the past 12 years he has been a district factory representative in California, and prior to that was employed by Macwhyte in product engineering work. He has been with the company for 21 years.

The Reflective Products Division of Minnesota Mining and Mfg. Co. announces that construction is underway on a new 85,000 sq. ft. laboratory to house its research and development facilities.

The reflective products division laboratory will occupy 51,000 sq. ft. and the remaining area will be assigned to other divisional laboratories.

The reflective products division produces "Scotchlite" brand reflective sheeting used widely as a safety device on auto bumpers and license plates and on highway safety and directional signs. The building is scheduled for completion in the summer of 1957.

* * *

William F. Styer has been named Milwaukee district sales manager for DeWalt, Inc., manufacturer of woodworking equipment for industrial and home shop uses. Mr. Styer's territory includes portions of

W. F. Styer

Wisconsin and Illinois. He has been with De Walt since 1955 and prior to that time was employed by Good Brothers, Inc., and the Armstrong Cork Co.

* * *

A coast-to-coast network of aviation fire extinguishing system recharge and service stations in the United States and Canada has been established by Walter Kidde and Co., Inc.'s Aviation Division. The service is now available in Georgia, New Jersey, Texas, Colorado, Kansas, Florida, Alabama, California, Washington, and Canada.

The servicing locations are placed in cities where maintenance and production centers for major airplanes or airplane builders are located.

* * *

Adam Breuer, president of Breuer Electric Mfg. Co., has announced the appointment of Robert L. Kline as general sales manager. Mr. Kline

R. L. Kline

will supervise all sales for the company's line of heavy duty and noiseless vacuum cleaners, floor scrubbing machines, portable electric blowers, and dust collectors. Since 1949 Mr. Kline has been sales manager for the West Coast and the western provinces of Canada.

* * *

Robert J. Davis, vice-president for international operations of America Optical Co., has taken over the responsibilities of vice-president for marketing. The assignment follows the death of Forrest L. Fraser.

Mr. Davis had experience in marketing with Warner-Hudnut, Johnson and Jennings, and Hills Brothers before taking over the administration of AO's international operations last year.

* * *

In October the Day Company completed 75 years of continuous

A. B. Osgood

operation, serving industrial plants throughout the nation. The firm designs, manufactures, and installs dust control systems. Mr. A. B. Osgood is president.

Illustrated is the first plant occupied by the Minneapolis firm in 1889.

Power Tools Operated From Military Trucks

How AUXILIARY power tools and other electric motor-driven equipment can be powered from military vehicles equipped with its standard 28-volt, 100-ampere rectified ac. generating system, was shown in a three-day demonstration conducted by the Leece-Neville Company, Cleveland, Ohio, which manufactures the system for the armed forces.

There are many times where such tools and equipment are called upon for duty either under normal field service or under emergency conditions, says P. H. Neville, company president. That they may be utilized to their fullest is of course vitally important to our armed forces who for great lengths of time operate away from established bases where normal electric current is not available.

With thousands of military vehicles today equipped with alternator (rectified ac. generating) system, the demonstrations were staged to show a few of the wide variety of operations that can be performed even under the most severe field conditions with little if any alterations in the existing electrical systems of the vehicles.

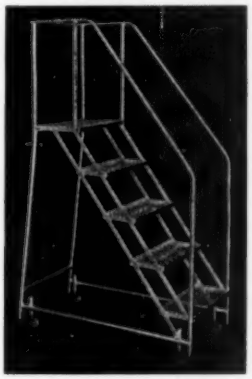
The alternator system, as used on these vehicles, provides for the normal electrical requirements of the vehicles, and in addition, has sufficient power to operate many different tools.

Auxiliary tools and equipment powered from alternator-equipped military vehicles during the demonstration were those for welding, a 250-watt emergency

COTTERMAN

WELDED STEEL SAFETY LADDERS

For Filing Rooms — Stock Rooms — Vaults



SAFE • STRONG • EASY TO MOVE • EASY TO CLIMB • NON-SKID STEPS

Frame work made from heavy gauge 1" diameter round steel furniture tubing, with all joints electrically welded. Mounted on Swivel Brake Casters which allow the ladder to be rolled freely when no one is on it. When you step on the ladder the rubber cushioned legs rest on the floor and prevent rolling.
Made in 13 heights—from 12" 1 Step to 117" 13 Step, and in 4 widths—18", 20", 26" and 32", with and without hand and platform rails.

We also manufacture the

COTTERMAN TRUCK - N - LADDER

A Truck and Ladder combined in a single unit.

Write for Folder No. 56-N for complete information and prices on both these items.

Manufactured by

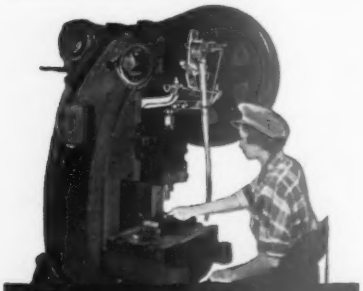
I. D. COTTERMAN

4535 N. Ravenswood Ave. Chicago 40, Ill.

LOCK OUT DANGER

to workers in your plant with "Lock-Out" safety device for use on switches, fuse boxes, and similar controls. Stops all possibility of starting equipment when maintenance or repair men are working on it.
Holes permit six different men to put locks on a switch. Machine cannot be operated until last workman removes his lock.
"Lock-Out" devices are coated with heavy vinyl plastic for top insulating qualities. Size 4¼" x 1½".

OSBORN MFG. CO.
WARSAW • INDIANA



Power Press Guards

Protect Operators • Increase Production

Wiesman cam-action press guards enable operators to work at top speed without fear of accident. Guarding is effective and completely automatic . . . does not hamper operator's vision or movement. For all sizes and styles of presses. Used by hundreds of firms. Inexpensive . . . easy to install.

Over 30,000 sold

Write for descriptive folder and 30-day FREE trial offer.

Name_____
Address_____
Title_____

Wiesman Manufacturing Co.
31 South St. Clair Street • Dayton 2, Ohio

light, chain and portable circular saws, portable circular saws, portable grinders, drills, impact wrenches, and chipping hammers.

For welding, electrical lines normally connected from the alternator to the vehicle's battery were attached directly to the welding electrodes. For other tools and equipment demonstrated, a transformer was connected to the alternator to raise the voltage to the required 230 volts, three phase, to provide both direct current battery charging coupled with simultaneous alternating current tool operation.

It was pointed out that welding equipment so used, could provide repair and maintenance activities in the field together with such other tools as emergency lights, saws, grinders and impact wrenches. Chipping hammers powered from a vehicle's electrical system would find wide use in field engineering work, as would various types of power saws and drills.

In addition, on Air Corps rescue trucks, power saws, for example, could be used at the scene of a crash to cut away portions of the body of the plane, to aid in both rescue work and in fire fighting.

Industrial Health

—From page 63

der conditions which produced a heavy exposure, showed that the only compound which produced it was the anti-skinning agent, n-butyraldoxime (C_4H_9NOH).

This was a surprising reaction since the effect has not been reported in the literature and had not been noted by the manufacturer in 15 years of experience in manufacturing the compound on both pilot plant and full plant scale. The reaction is substantially less violent than that reported in the literature for Antabuse (tetraethyl thiuram disulfide). The toxicity of n-butyraldoxime had been previously tested on animals and is of a very low order. Apparently there are no after-effects from this alcohol reaction and the whole effect has disappeared within 24 hours after the exposure.

Self-Sticking Safety Signs

Unskilled help quickly puts up Brady Safety Signs—without nails, screws, or tools. They stick and stay stuck to any surface.

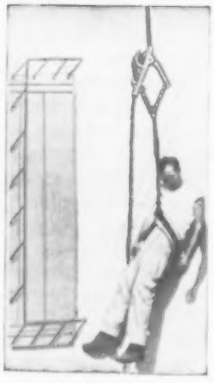
The signs you need are among the 500 different Brady Self-Sticking Accident Prevention Signs. Wordings, colors, and sizes are recommended and approved by ASA and NSC. Write for free samples and Catalog 145-D.

Self-Sticking Warning Stripes are applied fast — right off the roll. Stripes in 2 sealed-in plastic colors. Outlast paint. Write for free samples and Bulletin 143-A.

Fast delivery. Distributors in 150 cities.

W. H. Brady Co. 43
780 W. Glendale Ave., Milwaukee 12, Wis.

STOP THAT FALL



Safety Lifeline Lock

FOR SCAFFOLDS AND SWINGS

Locks automatically, instantly. Slips onto lifeline rope. Movable up or down with man. Instant locking position at all times, whether stationary or being moved up or down.

Snaps into safety belt. No adjusting. Inexpensive. Over-all length approx. 13". Does not harm rope. Weight: approx. 5 lbs.

Recommended for use on standard ¾" or ⅞" Manila rope.

Send for folder.

SAFETY TOWER LADDER CO.
1024 BURBANK BLVD. PO BOX 1052
BURBANK, CALIFORNIA

TRADE PUBLICATIONS

These trade publications will keep you up-to-the-minute on new developments in safety equipment and health products. All catalogs are free, and will be sent without obligation. Just circle publication number on the Reader Service Postcard.

1. **Hose Reels:** Prepared as an aid in selecting the hose reels which will meet the specific requirements of any user, this fully illustrated 20-page catalog describes the features of the wide variety of standard Hannay Hose Reels, as well as emphasizing facilities available for custom manufacturing to military and civilian specifications. The catalog is divided into five sections, featuring: fire fighting equipment; fuel delivery equipment; industrial applications; LP-Gas delivery equipment; and aviation refueling equipment. Clifford B. Hannay & Son, Inc., 243 Maple St., Westerlo, N. Y.

2. **Safety Equipment:** Catalog illustrates and describes company's line of safety equipment. Featured are: safety spectacles, goggles, face shields, welders' goggles, chippers' goggles, salt tablets, Fiber Glass Hats, and carbon monoxide indicator. Catalog numbers and prices included. United States Safety Service Co., 1215 McGee St., Kansas City 6, Mo.

3. **Window Washing Systems:** 16-page booklet No. 2022-A illustrates and describes window washing systems. The equipment which is attached to buildings of all heights enables window-washing men to elevate or lower themselves and travel along walls to quickly and easily reach any windows and wash them in safety. Photographs show the equipment in use on a number of different buildings. Included is catalog information on several types of window washing cages that accommodate either one or two men and for manual or electrical operation. Engineering data is also provided showing how to locate and support the track. Cleveland Tramrail Division, The Cleveland Crane & Engineering Co., Wickliffe, Ohio.

4. **Kidde Industry Underwriters Laboratories Issue:** Bulletin describes a public summation of the new Underwriters' Laboratories ratings for portable fire extinguishers and outline of its new industrial fire code. The listing gives the new ratings for models submitted by various manufacturers. Shown are ratings for: Carbon dioxide extinguishers, hand and wheeled; soda-acid extinguishers; water, repellent-gas operated extinguishers, dry chemical extinguishers, hand and wheeled; pump tank extinguishers; foam extinguishers, vaporizing liquid extinguishers. Walter Kidde & Co., Inc., 145 Main St., Belleville 9, N. J.

5. **Safety Signals:** Bulletin features portable, light-weight, warning signs that may be set up or taken down instantly for use by highway crews, men working in man holes, for detours, etc. Specifications included. R. B. Overton Co., 3003 E. Grand Blvd., Detroit 2, Mich.

6. **"How to Remove Stains from Floors":** Booklet gives first steps for general stain and spot removal from all floors, and lists separate, specific instructions for soft floors, like asphalt tile, mastic, rubber, wood, cork, linoleum, and magnesite, and for hard floors like concrete, marble, terrazzo, ceramic tile. How to remove the 14 problem stains, including tobacco, urine, perspiration, general service, fire, ink, dye, oils, greases, paint, etc. is explained. Instructions for repolishing terrazzo and marble are included. Huntington Laboratories, Huntington, Ind.

7. **Ropeology:** A new line of Walking Draglines by Page with new diesel power and a new dredger by Edward Dutra that only draws 24" of water when fully loaded are illustrated and described in new bulletin Macwhyte Ropeology number 5616. Features of the new draglines described are new V-Type Horizontal Diesel Power, stronger boom supported by Becket Staff and cables at three points, and centralized-lubrication system. Features of the new Dredger are described as: retractable "A" frame and spud hoist frame, five watertight compartments, all electric controls, living quarters for eight men. Size is 72 feet by 32 feet. Macwhyte Co., Kenosha, Wis.

8. **Hydrometers:** Eight-page bulletin describes company's complete line of hydrometers and thermo-hydrometers for use when accurate indications of specific gravity or other density scale are required. Precision Thermometer & Instrument Co., 1434 Brandywine St., Philadelphia 30, Pa.

9. **Seamless Welding Fittings and Flanges:** Bulletin FB-502 describes briefly but completely the full line of carbon, alloy and stainless steel seamless welding fittings and forged steel flanges. Various types and sizes are featured. Babcock & Wilcox, Beaver Falls, Pa.

10. **"Buyer's Guide to Industrial Rubber Products":** 60-page catalog, features company's complete line of safety equipment. Some of the items shown are: acid handling equipment, aprons, clothing, gloves, sleeves, linemen's gloves and sleeves, footwear, hose couplings; hose, and gaskets. Performance data included. Miller Products Co., Inc., 29 Warren St., New York 7, N. Y.

11. **Lifting Devices:** Featured in this bulletin are lifting clamps for moving of heavy objects. Shown are: a lifting clamp, drum lifter, hand grip, twin lifter, drum opener, drum tilter. Merrill Brothers, 56-02 Arnold Ave., Maspeth, N. Y.

12. Drill Bit: 6-page bulletin, RD29, gives a comprehensive description of one-use drill bits, their construction, specifications, and the preparation of drill rod shanks. Photographs and drawings are used freely to illustrate the offset gauge, thinner wings, steeper reamer angle of the one-use bits. Specifications listing the different sizes and color codes of available bits for different classes and sizes of steel is also included. Le Roi Division, Westinghouse Air Brake Co., Milwaukee 1, Wis.

13. Red Flasher Remote Reading Gages: Catalog No. 291 illustrates remote reading liquid level gages, including the newly developed Red Flasher Truscale which has a scale which flashes continuously in red for a positive warning when boiler water level gets too high or too low. Photographs and engineering drawings, included. Jerguson Gage & Valve Co., 80 Fellsway, Somerville 45, Mass.

14. Stationary Battery: Improvements in stationary batteries which are expected to extend service life up to ten per cent and reduce maintenance requirements are described in this catalog. The catalog features a new battery grid alloy and plastic container. Listing uses benefits in all stationary fields, the Exide-Tytex catalog also described in detail the negative plate construction which assures highly sustained capacities and balance with the positive plates and microporous separators and Vitrex retainers which insulate the plates. Also discussed are plastic separator protectors, heavy posts, sealed ring construction, water level lines, spray proof vent plugs, ample sediment space and large electrolyte capacity. The batteries are intended for use in the electric utility field, for signalling, telephone service, emergency lighting and other industrial operations. Exide Industrial Division, Electric Storage Battery Co., Box 8109, Philadelphia 1, Pa.

15. Sentry Full Flow Valves: Bulletin 500 describes eight types of Coppus Sentry Full Flow Valves for use on liquid and gas lines. Literature covers in considerable detail the design, function and specifications of these advanced valves. Coppus Engineering Corp., Worcester 2, Mass.

16. Crane Operation and Hitching Manual: A 75-page pocket size crane operation and hitching manual has been issued by Allis-Chalmers for the instruction of its personnel in rules and practices required to assure safety in this work. Well illustrated with drawings and photos, the manual carries rules relating to crane operation, describes safe hitching equipment and practices, and provides safe load tables for various types of slings, shackles, "S" hooks and eyebolts with instructions for their use. Allis-Chalmers Safety Service Section, Box 512, Milwaukee 1, Wis.

17. Combustible Gas Detection Equipment: Illustrated specification sheet gives detailed operational and construction data, application suggestions on company's line of combustible gas detection equipment. Featured are the J-W Models E and EE and Sample Drawing Accessory. Johnson-Williams, Inc., Box 6-Station A, Palo Alto, Calif.

18. Industrial Safety Products: 16-page catalog covers company's complete line of dust goggles, face shields, acid and chemical goggles, specialty safety goggles, flash spectacles, welders' helmets, plastic eyeshields, goggles, chipping and grinding spectacles, welding plates. Full descriptions of each item given. Glendale Optical Co., Inc., Valley Stream, L. I., N. Y.

19. Time Controls: 20-page booklet describes industrial time controls. The booklet can be used as an up-to-the-minute check list of leading Paragon time switches and timers. It, also, provides the correct answers for countless electrically operated automatic on-off operations used in commercial, industrial and farm applications. A fold-out reference chart clearly defines what each control is, what it does, where it may be used and how to select and purchase it. Paragon Electric Co., Two Rivers, Wis.

20. Welding Catalog: Catalog No. 150 covers company's complete line of oxy-acetylene welding and cutting torches, machine cutting torches, regulators, pressure gauges, hose connections, couplings and safety equipment. Modern Engineering Co., Dept. 244, 3407 Pine Blvd., St. Louis 3, Mo.

21. Dust Collectors: Unit dust collectors now available with casters for easy movement are described in this bulletin. Models are available for any type dust collecting operation. Torit Manufacturing Co., Walnut and Exchange Sts., St. Paul, Minn.

22. Fog Nozzles: Adjustable fog nozzles for fire fighting units are discussed in this bulletin. It is shown how these nozzles are equipped for easy adjustment for a straight stream, narrow fog pattern, or wide fog pattern. Akron Brass Manufacturing Co., Foot of Spruce St., Wooster, Ohio.

23. Floor Safety: Bulletin describes "Flintdek" anti-slip coating for steps, ramps, and other public areas. Flintdek is composed of a cohesive, resinous plastic which is incorporated a mineral type of wear-resistant aggregate. It is available in red, green, slate grey, cement grey and high-visibility yellow colors. It is classified and listed as an anti-slip floor surface by Underwriters' Laboratories. The Flintkote Co., Industrial Products Division, 30 Rockefeller Plaza, New York 20, N. Y.

24. Noise Measurement: Simplified impact noise measurement is explained in literature available from manufacturer. The 8-page technical folder tells of the characteristics of impact and suggests methods of testing and measuring its effects. General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.

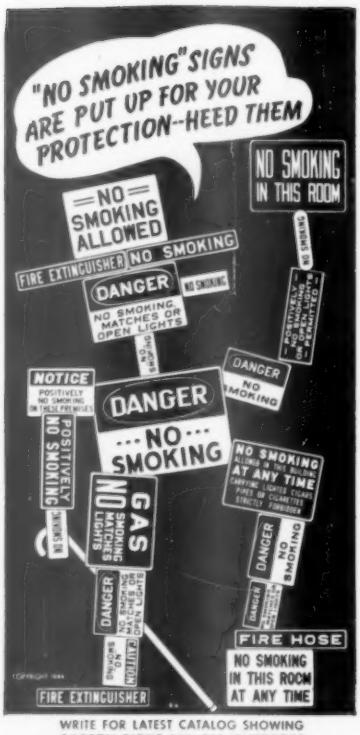
25. Safety Messages: Tested safety messages put in your employees' hands several times a day can help bring about more "Safety Consciousness" and reduce accidents. One way to get your safety messages across is to use imprinted paper cups, as described in this folder. United States Envelope Co., Springfield, Mass.

26. Skin Cleanser: Vi-Lan is an all-purpose skin cleanser for use with or without water. Folder gives full details on this product and also includes dispensers for the product. Dameron Enterprises, Inc., 427 S. 20th St., Louisville 3, Ky.

27. Safety Cans: Oily waste cans and what they do to help prevent serious plant fires are pictured and described in this catalog. Witt Cornice Co., 2148 Winchell Ave., Cincinnati 14, Ohio.

28. Safety Tank Car Platform: How to eliminate dangerous hazards of working on slippery tank car tops is discussed in this bulletin. Designed for use by railroads, chemical and petroleum companies for loading and unloading of any type of liquids. Nichols Engineering Co., 3816 W. Grand Ave., Chicago 51, Ill.

29. Floor Maintenance Equipment and Supplies: Illustrated 4-page folder describes products designed to aid efficient floor care. Lists Combination Scrubber-Vac machines, conventional scrubbing-pol-



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SAFETY SIGNS FOR ALL PURPOSES

STANDARD SIGNS, INC.
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Leaves air mint fresh!

Mintol

the multi-purpose industrial disinfectant with the fresh mint leaf aroma

MINTOL disinfectant has a coefficient of 9. Diluted half a cup to the pail of water, it meets the new Use Dilution Confirmatory Test.

KILLS BACTERIA
SANITIZES THE SURFACE
DEODORIZES

For free sanitary survey of your premises ask your Dolge service man

expendable
DOLGE
WESTPORT, CONNECTICUT

ishing machines, steel-wool pads, applicators, vacuum cleaners, mop trucks and other mopping equipment, and a carryall for transporting cleaning supplies and equipment. The folder also lists waxes, sealers, and cleansers, and gives recommendations for use and packaging information. Finnell System, Inc., 2200 East St., Elkhart, Ind.

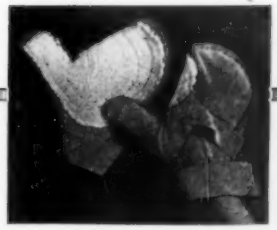
30. Vacuum Sheet Lifters: Hands and fingers of press operators can be protected from hazards by furnishing safety feeders and sheet lifters to employees. These items, along with many other safety devices for press operators are described in this catalog. F. J. Littell Machine Co., 4165 Ravenswood Ave., Chicago 40, Ill.

31. Floor Dust Control: Floor dust control through application of "Westone" (which also inhibits bacteria growth) is discussed in this bulletin. West Disinfecting Co., 42-16 West St., Long Island City 1, N. Y.

32. "How to Drive and Stay Alive": Illustrated to show good and bad driving practices on all types of roads and under v.rying conditions, this 32-page color booklet contains tips for teenagers, for adult drivers, etc. It has up-to-date information on turnpike driving and on such recent rules as those governed by the new "YIELD" signs. Also included is a visual check list, recommending the parts of a car which are to be checked at least twice a year. There is also a quiz-type checklist aimed at preparing the motorist to cope with common emergencies. Another section illustrates 12 safety rules which should be taught children who ride in the family car. B. F. Goodrich Co., 10 East 40th St., N.Y. 16, N.Y.

33. Non-Slip Surfacing Material: Catalog describes and illustrates "Safety Walk" a non-slip surfacing material that provides perfect traction even under water or grease. Application procedures are presented for stairways, ramps and runways. Minnesota Mining & Manufacturing Co., Dept. LB-36, St. Paul 6, Minn.

34. Swivel-mounted Lights: Catalog illustrates a wide variety of "Localities" that are swivel-mounted for easy positioning as the work requires. Suitable models are included for benches, laboratories, machines, desks, etc. Fostoria Pressed Steel Corp., Fostoria, Ohio.



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SINGER'S new KOOL-MITT is ideal for use wherever any other mitt has proved inadequate. It is made for efficient and economical use in foundries, heat treating plants, steel mills, pottery works, etc.

KOOL-MITT is unique because it consists of three layers of materials:—
(1) ASBESTOS protects leather from shrinking and gives fireproof protection.
(2) LEATHER gives the mitten long life and maximum protection against sharp and abrasive surfaces.
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This mitt is stitched with steel staples for long life . . . outlasts up to four pairs of reinforced asbestos mitts and in some instances has replaced asbestos gloves.

Write today for prices and samples.

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★ The Positive Ladder Safety Device

It locks automatically—instantly—holds.

SAFETY DEVICE FOR LADDERS

Prevents death and injuries from falling.

Automatic: Positive. Will catch workman if he starts to fall even if unconscious.

See the new de-icing feature.

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Notched rail **hot dipped galvanized.** Entire equipment rust and corrosion proof. In use throughout country and abroad for approx. 8 years.

Patented. Manufactured only by

SAFETY TOWER LADDER CO.
1024 Burbank Blvd., P.O. Box 1052
BURBANK, CALIFORNIA

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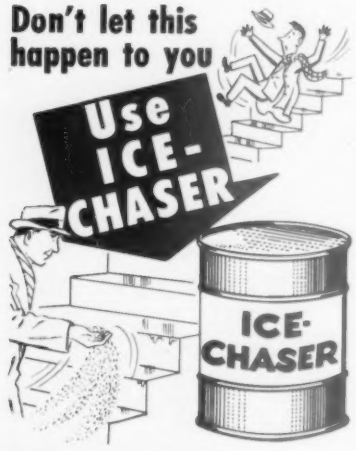
Don't let this happen to you



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Just scatter ICE-CHASER over ice and hard packed snow—the quickly generated heat gets busy in a hurry, saving hard shoveling and chipping . . . avoiding dangerous accidents caused by slippery steps, walks and driveways.

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In 10-lb. bags and 100 and 400 lb. drums. Write or wire for prices today.

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1831 Willey Ave., Cleveland 13, Ohio

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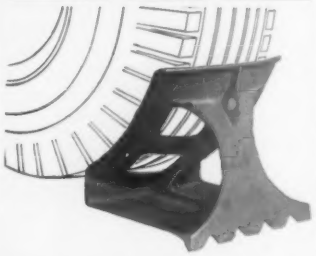
unless you use
CASTEEL WHEEL BLOCKS



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Here is the new Heavy Duty CASTEEL Wheel Block WB15, designed for hard service, exceptional holding power and severe stress.

Well adapted for chocking big trucks, trailers and other heavy equipment, as at docks or in loading with lift trucks.

Cast from high-strength Alloy Steel with five ¾" angular calks cast in rear of base to guard against slippage.

SEND FOR NEW BULLETIN N56D

Calumet Steel Castings Corp.
1636 Summer Street Hammond, Indiana

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Want More Information?

. . . the Reader Service postcard will get it for you FAST!

Here's how it works—

Printed below are two identical Reader Service postcards—the bottom one for your use; the top one for later readers of this issue. The numbers listed on each card are keyed to product advertised and the new safety equipment and trade publications described on pages 153 through 163. Just circle the items you want to know more about, and we will ask the manufacturer to send you full information without obligation. Both cards are perforated for easy removal, and no postage is required.

New Safety Equipment

Products featured in this section have been carefully reviewed by Council engineers so as to bring you only what's new and reliable in the safety field. Only new safety and health products, or newsworthy improvements in existing equipment are eligible for listing.

Trade Publications

Here's a wealth of helpful trade literature—catalogs, spec sheets, booklets, brochures—that will help you compare before you buy. Whether you are in the market now, or think you may be at a later date, you'll want these valuable references in your safety equipment data file.

Products Advertised

As you read through this issue of the NEWS, you will find advertisements describing equipment that may help you solve some of your accident problems. Instead of making a "mental note," make sure you get full information by circling the corresponding page number on the Reader Service postcard. The letters L, R, T and B locate the ads on the page—left, right, top and bottom. IFC—inside front cover; IBC—inside back cover; BC—back cover.

IMPORTANT—Be sure to fill in your name, organization and address in the space provided on this side of the postcard.

Please show company name in full — do not abbreviate.

Please send me more information on the items circled below: **NOVEMBER, 1956**
(Good until February 28, 1957)

NEW SAFETY EQUIPMENT:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
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163RB	164T	164B	IBC	BC								

NAME.....

POSITION.....

COMPANY.....

ADDRESS.....

CITY & STATE.....

Please send me more information on the items circled below: **NOVEMBER, 1956**
(Good until February 28, 1957)

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IFC	1	3	5	7	9	11	13	15	16	41	43	
44	45	46	47	49	51	52	53	55	57	59	61	
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163RB	164T	164B	IBC	BC								

NAME.....

POSITION.....

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ADDRESS.....

CITY & STATE.....

The advertising pages of the News

. . . your guide to reliable suppliers of worthwhile safety equipment

The advertising policy of the NEWS requires that all equipment and products meet established codes and standards, have the approval of recognized testing agencies, or have proven their value through actual use in industry. Council engineers and technicians screen every advertisement to make sure that product description is accurate, and performance claims verified by reliable sources. It should not be construed, however, that products advertised are approved or endorsed by the National Safety Council.

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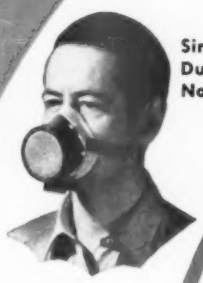
Before you mail your Reader Service postcard . . .

TAKE ANOTHER LOOK AT

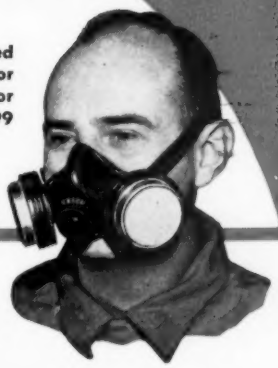
- the ADVERTISING pages
- the NEW SAFETY EQUIPMENT section
- the TRADE PUBLICATION section

Make sure all the items you want to know more about are circled . . . check to make sure your name, organization, and address are printed on the reverse side of the postcard . . . THEN mail it today.

CESCO RIGHT...before your Eyes!



Single-filter
Dust Respirator
No. 80



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Organic Vapor
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No. 99

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ENTIRELY NEW
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• Here is an entirely new Dual Cartridge Respirator which carries Bureau of Mines approval. It is designed for use in organic vapors or acid gases not exceeding 1/10th of 1 per cent of volume. Twin cartridges, each of which contains 85 cc of efficient absorbent, reduce breathing resistance to a minimum. Rebreathing of exhaled air or the exhausting of used air through the cartridges is prevented by positive-acting inhale and exhale check valves. Cartridges are easily replaced by removing screw-type caps. Valves and headbands are quickly replaced without tools.

A newly designed facepiece, with special attention to nasal contours, provides a snug, leak-proof fit with moderate headband tension. Dual headbands permit proper balance and adjustment for perfect seal along all facial contours.

Contact your nearest CESCO Distributor today for full information and prices on the complete line of respirators to meet every type of industrial requirement.

Approved
Dust Respirator
No. 94

Approved Dust Respirator No. 96 with high filtration and low breathing resistance

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Supplied-Air Respirator
No. 600

Write for complete Catalog

CHICAGO EYE SHIELD COMPANY • 2306 Warren Boulevard, Chicago 12, Illinois

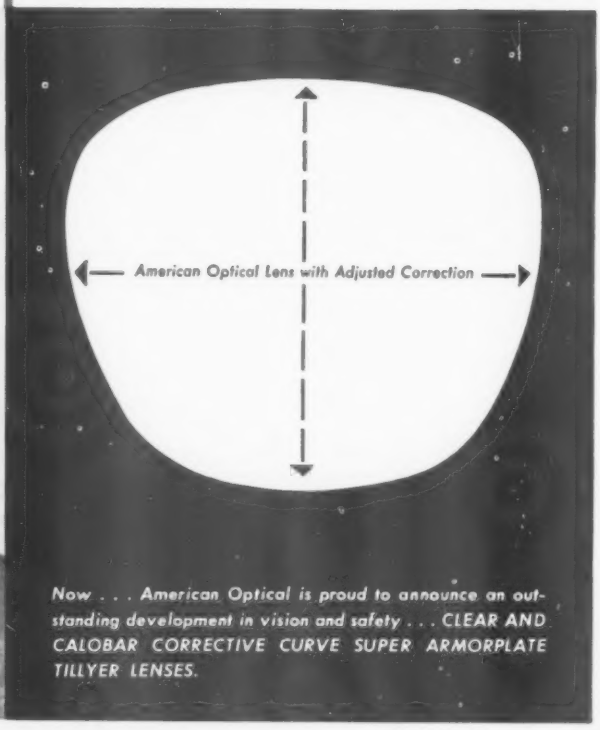
OFFICES IN: Atlanta, Baton Rouge, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Dallas, Denver, Detroit, Houston, Kansas City, Knoxville, Little Rock, Los Angeles, Louisville, Mexico City, D.F., Milwaukee, Montreal, Orange, Peoria, Philadelphia, Pittsburgh, Salt Lake City, San Mateo, Spokane, St. Louis, St. Paul, Toledo, Tulsa

Light-duty Respirator
No. 81

CESCO C E S C O **FOR SAFETY**

Now Another AO—"First"!

Balanced Vision in Safety Rx Glasses



Now . . . American Optical is proud to announce an outstanding development in vision and safety . . . CLEAR AND CALOBAR CORRECTIVE CURVE SUPER ARMORPLATE TILLYER LENSES.

AO Ultrascopic Safety Glasses with Balanced Vision are the Ultimate in Eye Protection

There are over 420 combinations in the American Optical line of metal (F5100 series) and plastic (F9500 series) safety glasses. You can give every worker the type of eye protection he needs. You can fit any worker. SEE THESE SAFETY GLASSES WITH BALANCED VISION — call your nearest American Optical Safety Products Representative.

The Big Benefit is BALANCED VISION

With "compensated" or balanced vision throughout the lens, the worker obtains optimum seeing qualities from his glasses whether he looks up, down, laterally or straight ahead. Naturally, this "balanced vision" will increase visual efficiency and safety on the job . . . reduce production and eye accident costs. This advance is available in all regular prescription ranges.

DR. EDGAR D. TILLYER, internationally recognized Dean of Ophthalmic Lens Design.

Facts about the AO TILLYER Principle of ADJUSTED CORRECTION

Lenses which interpret the services of the ophthalmic profession should be constant in R power from center to edge. Such constant R power depends upon achieving a balance between marginal sphere and cylinder characteristics of the lens. For over thirty years the Tillyer Principle has been the accepted standard in achieving this balance. Now, new computations make it possible to apply the well-known Tillyer principle to safety thickness S.A.P. Lenses.

Electronic computing gives a new scientific dimension to lens perfection. This advance for the first time is adapted to safety lenses and is now available with American Optical eye protection equipment.

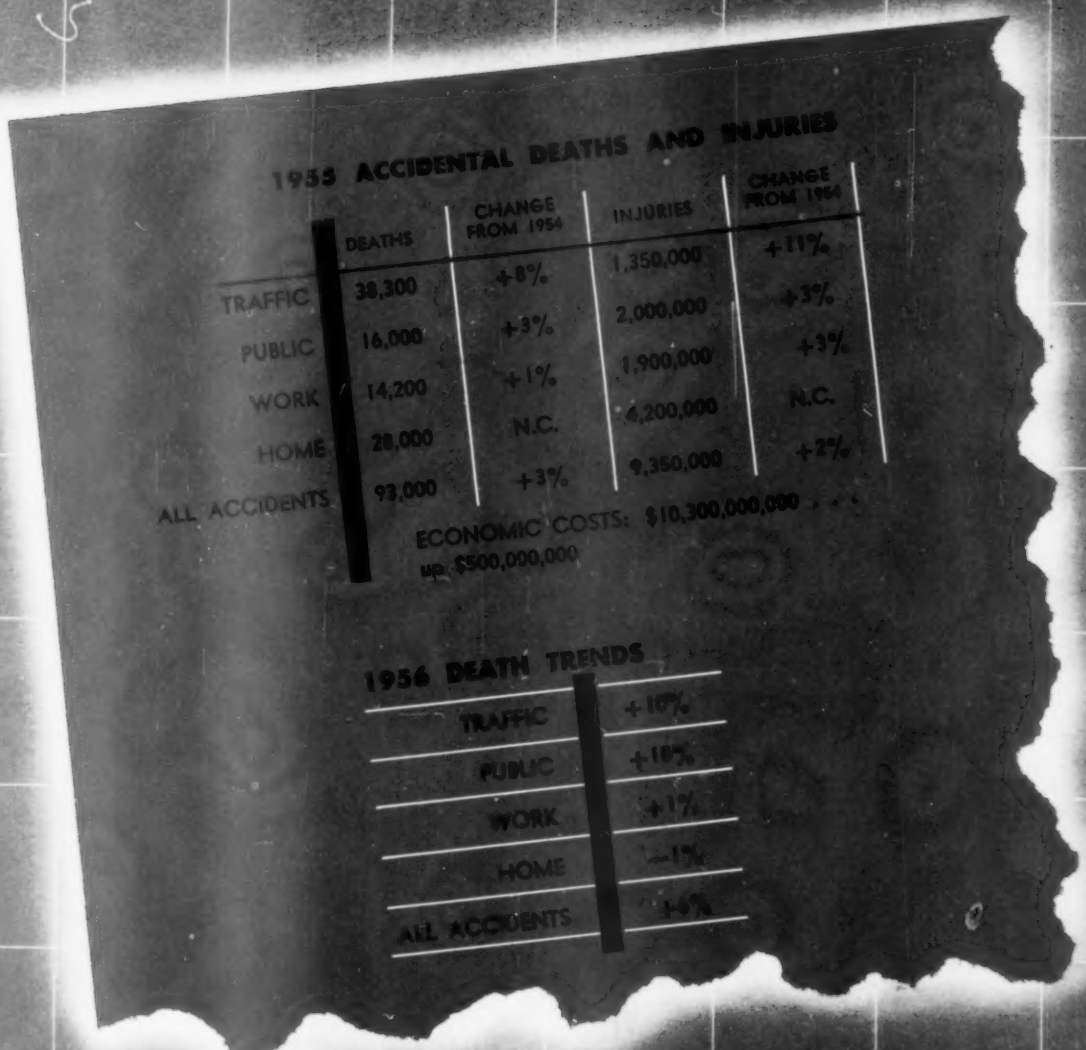
Write for descriptive literature just off the press!

American Optical COMPANY
SAFETY PRODUCTS DIVISION

Always insist on the AO trademark on lenses and frames.

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES

The Fight for Life



1955 ACCIDENTAL DEATHS AND INJURIES

	DEATHS	CHANGE FROM 1954	INJURIES	CHANGE FROM 1954
TRAFFIC	38,300	+8%	1,350,000	+11%
PUBLIC	16,000	+3%	2,000,000	+3%
WORK	14,200	+1%	1,900,000	+3%
HOME	28,000	N.C.	4,200,000	N.C.
ALL ACCIDENTS	93,000	+3%	9,350,000	+2%

ECONOMIC COSTS: $10,300,000,000 . . . up $500,000,000

1956 DEATH TRENDS

TRAFFIC	+10%
PUBLIC	+18%
WORK	+1%
HOME	−1%
ALL ACCIDENTS	+6%

GREEN CROSS FOR SAFETY

A REPORT ON THE FORTY-THIRD YEAR OF THE NATIONAL SAFETY COUNCIL

November 1956

The Problem Grows . . .
Can We Meet Its Challenge?

The figures on the front cover of this report are statements of fact. However unpleasant, they cannot be ignored. Rather, they are a challenge to increased effort. It is with this attitude that we must face today's accident situation.

In this report we have related the National Safety Council's stepped-up tempo and its expansion of activities in the fight for life. In spite of these intensified efforts—made possible by the work of our members, increased financial support, and the extension of our sales and services—and in spite of the fine work of many other organizations, of public officials and of individuals, we have not held the gains of previous years.

Let's take a look at what is happening.

Our population has increased from 151 million in 1950 to 164 million in 1955—an increase of 8.4 per cent.

The number of motor vehicles has increased from 48.5 million in 1950 to 62 million in 1955—an increase of over 27 per cent.

The number of gainfully employed has increased to the highest point in the nation's history.

All these conditions have added to the size and urgency of the accident problem. The problem has grown faster than our means to control and combat it. And this in spite of the growth in number and in pace of all those enlisted in accident prevention work.

There is only one solution to this problem—a greatly strengthened safety movement. We must find the means of adding manpower, resources and new weapons to our fight against accidents. Right now we are limited to what amounts to a holding action. We must find the means to wage an all-out attack!

The factors mentioned above which have magnified our present accident problem—population, motor vehicles, employment—will continue their influence in the decades to come. We must fight every step of the way if we are to meet this threat.

The National Safety Council pledges that it *will* fight every step of the way until the victory is won!

Ned H. Dearborn

NED H. DEARBORN
PRESIDENT

PART ONE

The Council's Programs 1956

Reports on the activities and programs of the National Safety Council in the principal areas of accident prevention in 1956

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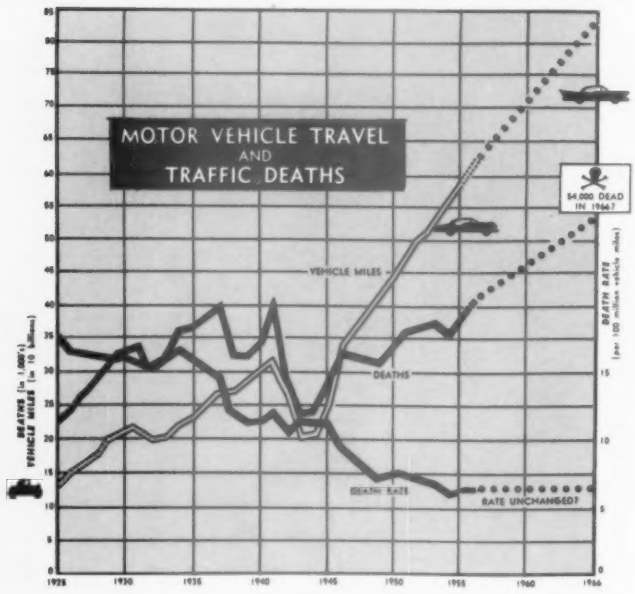
Traffic & Transportation Report

Traffic Deaths and Death Rates Rising

In 1955 traffic fatalities totaled 38,300, an eight per cent increase over the previous year. Deaths increased more sharply than mileage traveled, and consequently the mileage death rate was also up. In most other years in which fatalities rose, safety and traffic groups could gain at least some small satisfaction from statistics which showed a reduction in mileage rate. Now, the increase in use of vehicles has so far outstripped the growth of physical and social controls that we are not traveling as safely as heretofore.

The increases in traffic deaths continued during 1956, the latest reports showing a rise of almost 10 per cent over 1955 levels. Again, fatalities rose more rapidly than motor vehicle travel, and the indications are that the mileage death rate will continue to increase in 1956.



At present trends, we shall kill 42,000 Americans in traffic accidents this year.

The worst is yet to come. By 1966 it is estimated motor vehicles will be driven 825,000,000,000 vehicle miles, 47 per cent more than in 1955. If the present death rate continues, 54,000 will die in traffic accidents in 1966.

From 1946 to 1955, motor vehicle travel in the United States almost doubled. Official traffic control program budgets did not increase by any such ratio. The Council's staff to service programs rose half as much as travel during the same period.

The Federal Highway Act of last year will help. The roadways constructed will be safer than present roadways, and congestion, which in turn causes accidents, will be relieved. However, the Highway Act will in no sense meet the accident problem which is upon us, and the even greater accident problem which lies ahead. Much of tomorrow's traffic must still travel on today's streets—streets requiring improved efficiency if we are to relieve congestion and improve safety.

First and Foremost . . . We need to apply the Action Program

The Action Program was prepared by a large group of the nation's most experienced people working on street and highway safety, gathered together in the President's Highway Safety Conference in 1946. Measures advocated in their reports have been brought up-to-date and reaffirmed by each White House Conference since 1946. These measures are summarized in com-

mittee reports, as follows: Laws and Ordinances, Public Information, Accident Records, Enforcement, Education, Motor Vehicle Administration, and Engineering.

In 1955, the states met only 66 per cent of the *minimum* criteria for an adequate balanced program. The cities for which information was available scored only 52 per cent. The evaluations for major categories are shown in the charts below.

While there can be no doubt that more and better information on how to prevent accidents is sorely needed, we must face the fact that by applying the information we already have, as agreed upon in the Action Program, we could *cut traffic accidents in half!*

The National Safety Council's two most important activities in furtherance of the Action Program are:

1. The Annual Inventory of Traffic Safety Activities, a comprehensive, practical plan for evaluating traffic safety activities in states and cities to determine deficiencies and enable each state and community to establish priorities for remedying deficiencies.
2. The development of *organized public support* for those state and city programs necessary to reduce traffic accidents.

Annual Traffic Inventory

For 1955, 1,206 cities and 47 states reported in the Annual Inventory of Traffic Safety Activities. The Inventory service provides states and cities with a means for annual, detailed appraisal of their traffic management and accident prevention programs, a measurement of progress, and stimulation for improvement.

In making Inventory reports cities and states assemble detailed information on traffic accidents, injuries and deaths, on records keeping, traffic law enforcement, engineering, courts, traffic safety education in schools and for the public, and safety organization.

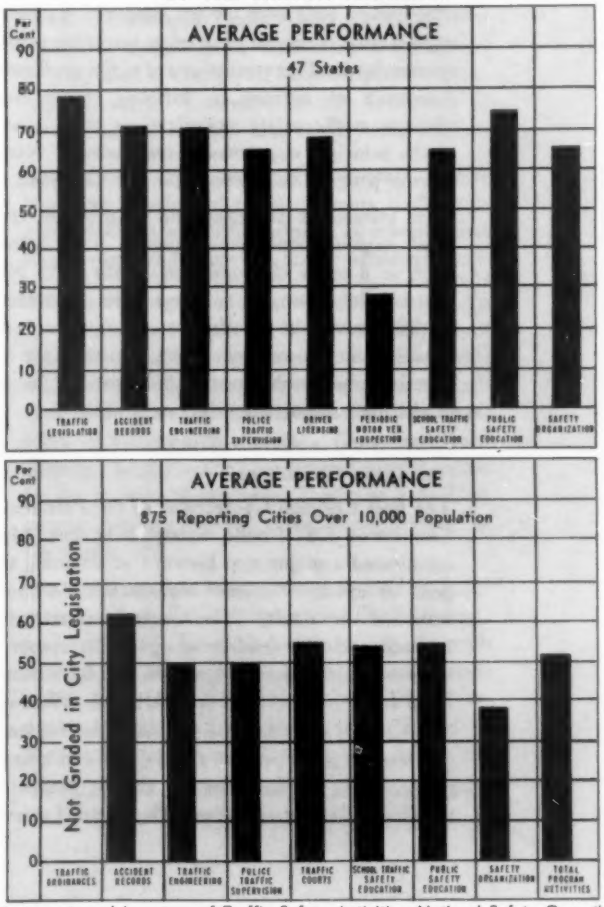
States and cities benefit in three ways from Inventory service: by preparing reports which give an opportunity for self appraisal; by receiving the Council's evaluation and analysis based on accepted criteria; and by the body of national information to which their reports contribute.

For 1955, Awards of Merit were earned by one state and four cities for programs which were superior in all aspects. Certificates of Achievement were awarded to 25 states and 402 cities which reported outstanding performance in one or more Inventory sections. These certificates and awards were given by the National Safety Council for death and injury records, accident records, school traffic safety education, public safety education, and safety organization.

Awards for excellence in traffic courts, police traffic supervision, and traffic engineering are granted by the American Bar Association, International Association of Chiefs of Police, and Institute of Traffic Engineers, respectively. Awards to states for outstanding programs of driver licensing are made by the American Association of Motor Vehicle Administrators. This organization will sponsor awards for periodic motor vehicle inspection after its advisory group revises the report form on this activity as well as the evaluation procedures.

The Council's field staff presents Inventory analyses and recommendations in the states and larger

EVALUATION OF MAJOR CATEGORIES OF THE ACTION PROGRAM



Source: Annual Inventory of Traffic Safety Activities, National Safety Council

cities. Thirty-five states are providing staff to present the findings of the analyses reports to city officials, civic groups, and others interested in traffic management and traffic accident prevention in the smaller cities. About 400 representatives of various state agencies were trained by the Council staff in the techniques of analysis presentation and background of the Inventory Program.

During 1955 the Council, through a special grant, inaugurated a statistical appraisal of Inventory procedures and results. Multiple correlations of program activities and their effectiveness in prevention of traffic accidents are being made to the end that Inventory data requested and evaluation procedures may be improved to more effectively measure traffic management programs and improvement needs.

Getting Organized Public Support for Improvements

Street and highway traffic management is primarily the responsibility of public officials. However, public officials can perform with maximum effectiveness *only* with citizen support. A citizen organization is needed to develop favorable public opinion for intelligent solutions of traffic problems. Assistance to citizens in forming strong and effective traffic safety organizations thus is one of the principal objectives of the Council. Noteworthy progress has been made the past year.

Basic statements of policy and program of citizens' organizations were studied, and agreed upon in a series of workshops at the 1955 National Safety Congress. These basic statements of the essentials of an effective organization (and pitfalls which have made some organizations ineffective) have subsequently been ratified by 50 of the most important safety organizations.

Regional Conferences of the President's Committee

The four Regional Conferences of the President's Committee for Traffic Safety held last May constituted a major step forward in attaining the goal of effective citizen organization in every state and community. The Conferences attracted business and civic leaders in significant numbers, were well planned and organized, and have stimulated local activity on a scale hitherto unknown. The Council extended itself to assist the Regional Conference work because the objective of citizen traffic safety organization so closely paralleled the Council's own objective. The Council shared in the overall planning, and had full responsibility for the preparation of the Conference Workbook, preparation of program participants' briefs, staff program coordination in each of the four regions, preparatory field work in 24 of the 48 states, and training of the administrative and consulting staff recruited from national, state and local traffic and safety organizations.

From their inception, it was recognized that the Conferences could achieve ultimate success only if there was an aggressive and thorough follow-up after the Conferences. While the Council's field staff has been able to service many requests for assistance through correspondence and through some field service, the presentation of Inventory analyses has been the Council's principal Conference follow-up. The burden of this work has prevented giving the type of assistance which would be desirable in many places.

There is serious danger that the gains made at the Regional Conferences will not be consolidated due to lack of field service resources.

Business Advisory Panel

The Business Advisory Panel of the President's Committee for Traffic Safety, a group of the nation's top business men, has emphasized the importance of good citizen organization on a statewide basis. The focal point of effective action is the local community. However, a strong organized business effort to develop statewide citizens' traffic safety groups will strengthen both state and local programs.

The Council assisted the Business Advisory Panel in the preparation of a brochure outlining the essential features of a successful citizens' traffic safety organization and a step-by-step procedure for creating a statewide organization.

The Advertising Council

The Advertising Council's "Stop Accidents" campaign, conducted for the National Safety Council, has adopted a new emphasis on the need for citizens' support of official programs and community safety organizations, as well as the individual's responsibility to drive and walk safely. Advertising space and time with an estimated value of $10,000,000 will be given as a public service contribution to the basic effort to get organized public support for traffic safety program improvements.

"Back the Attack"

The Traffic and Transportation Conference and

please fold out for Traffic Analysis Chart

the organizations represented therein have developed a December special emphasis campaign to "Back the Attack" on traffic accidents. The December special emphasis will launch a continuous program to step up the attack by adopting the Action Program. Public education materials will emphasize the individual's responsibility in the attack, but will also stress the need for citizens to get behind the official programs, particularly firmer enforcement on the specific violations which caused last year's December traffic disaster.

Thus the various programs directed at the objective of citizen organization are complementing and supplementing one another. The opportunity for important progress seems greater than ever.

Urgent Needs

As stated, *the urgent need in the cities and states is to apply the Action Program.*

The urgent need of the Council is for additional funds to provide improved Inventory service, plus adequate field service to create strong citizens' traffic safety organizations, both state and local.

Other Traffic Improvements and Needs

The Council's other activities to promote the Action Program, and also improve that Program, are briefly described on the following pages and are cataloged in the analysis table.

In preparing this analysis table the basic needs found in "The National Traffic Safety Program, A Survey and Appraisal" have been used as major headings. This report, prepared for a group of insurance companies several years ago, continues to be the most comprehensive and searching appraisal of the nation's traffic safety work at the national level.

Better Coordination

The Traffic and Transportation Conference of the Council has during the past 18 months assumed responsibility for the work of three committees which formerly operated as independent groups—the National Committee for Traffic Safety, the National Committee for Traffic Training, and the National Committeee on Uniform Traffic Accident Statistics.

The Council Committee which directs the Inventory was reactivated as a committee under the Conference.

Traffic and Transportation Conference membership was expanded to provide better balance of representation, particularly from commercial motor transportation, state and city traffic officials, and non-motor-vehicle transportation groups.

The Farm Conference, which serves as the advisory group from agriculture for the President's Committee for Traffic Safety, continued its active direction of farm traffic safety activities.

The Council established two additional Conferences, for women and for labor organizations. Both of these include traffic accident prevention in their work.

These major developments, plus the other items briefly enumerated in the analysis table, add up to a pattern of greatly improved coordination of traffic safety activities.

Better Information

A technical sub-committee is at work improving program measurement information of each section of the Inventory of Traffic Safety Activities. The objectives include more measurement of *quality* of programs to extend the value of present quantity measures. Extension of the Inventory to serve counties and toll facilities is being studied.

Development work on an experimental county inventory is now under way. County traffic programs take on added importance as urbanization affects rural and suburban traffic jurisdictions.

The newly organized Research Division of the Council has as its initial project the collection of information on all organizations and individuals conducting or familiar with traffic safety research activities. Thus far information has been compiled on 67 research projects. These have been classified by a library classification number used by the Bureau of Highway Traffic at Yale University and has evolved considerable interest in the traffic field.

Authorization has been received to publish quarterly as a bound-in supplement in "Public Safety" a Journal of Research summarizing research projects considered to be timely and of interest in the field of traffic safety. The published research projects will be selected by a Board of Referees to advise Council staff of their suitability.

To date five such articles have been received which appear to be acceptable for publication in

the Journal. Others are promised and it is contemplated that the first issue of the Journal will be published towards the end of the year or the first of 1957.

A comprehensive plan to improve and expand "Public Safety" magazine was developed and initial steps under the plan have been taken. The objective for "Public Safety" magazine is that it fully meet the need for a medium of technical and professional communication within the traffic safety movement.

Better Recognition

Programs conducted by the Council to recognize contributions to the advancement of traffic safety continue to form a substantial element of the Council's program.

Awards in Inventory Programs have gained added prestige with the placing of the inventory program on an achievement measurement basis, and with awards in several fields being made by the organizations operating in that field.

The Citation Awards for Traffic Safety, formerly administered by the National Committee For Traffic Safety, continued to draw entries which reflect increasingly effective and substantial contributions to traffic safety advancement by individuals, groups, companies, professional and trade associations, and governmental organizations. Twenty-one individuals and groups were recognized with Citation Awards by the Board of Judges considering the one hundred 1955 nominations.

Firms operating fleets of vehicles are participating in increasing numbers in the National Fleet Safety Contest. For the first time in the history of National Safety Council's Individual Safe Driver Awards, the number of drivers receiving awards for a year of No-Accident Driving exceeded 100,000 in the year 1955-56.

Other awards for public safety activities have continued to gain in value. The Railroad Awards for Public Safety Activities have continued to grow with 16 awards to railroads for 1955 activities. The Carol Lane Awards recognize women and women's groups active in traffic safety.

Better Program Aids

Further improved program aids have been provided to official and voluntary traffic safety agencies, some through Operation Safety, some by special services such as the "Signs of Life" program of the Highway-Railroad Crossing Committee, and some by applying the studies of the Winter Hazards and Chemical Tests for Intoxication Committees. One urgent need is for staff facilities to develop specialized aids for promoting acceptance in the city or state for specific recommendations drawn from the Inventories.

More Field Services

The Council increased its field services in 1955, but the needs further over-ran available manpower as the four Regional Conferences of the President's Committee for Traffic Safety brought many requests for technical aid and for service on the Traffic Inventories.

Better Personnel Training Programs

The Council helped increase personnel training activities for state and local agencies—some under Council sponsorship, but mostly by assisting other organizations—in such fields as Inventory preparation and follow-through, records improvement, chemical tests for intoxication, public education, police traffic administration, and traffic engineering. Here again, needs continue to outrun staff and service facilities.

Better Public Education Work

Extended and improved work in the public education field is another accomplishment. Advances were made through the initiation of a periodic calendar of public support and information activities for traffic safety; through shifting to quarterly packaging of Operation Safety; and provision of more serviceable campaign materials through all channels. Far greater participation than ever before in community and state public education programs was reported through the Inventory. Measured against the needs, however, the Inventory reports point up the great gap still to be filled.

The Council sponsored two public education conferences, one for the state safety directors, safety council managers and public education personnel of Northeastern states, and one for the Virginia Inventory Representatives' Association. Benefits to both groups and to the Council prompt recognition of the value of far greater use of this means of communication.

Greater Media Support

The media of public communication—newspapers, radio, television, magazines, company publications, advertisers, labor press, motion pictures—again contributed record service to the cause of traffic safety. The Council finds, unfortunately, that it cannot fill all of the opportunities for utilization of media channels for public education because of budget limitations.

Broadened Civic Action

A major move in providing better help for the

development of civic interest and the exercise of civic responsibility was opened up with the merging of the Public Education Committee and the former National Committee for Traffic Safety into the Civic Action Committee of the Traffic and Transportation Conference.

Service to citizen groups of all types, extended in 1955 when the Council assumed the work of the former National Committee for Traffic Safety, was stepped up to the limit of available staff. This area of service offers one of the greatest potentials for the promotion of civic action for traffic safety. It is especially desirable that groups be aided in undertaking practical projects more helpful in supporting and augmenting their overall community safety programs.

Motor Transportation

The Council continues to serve an ever increasing number of truck, bus, passenger car, taxicab and school bus fleets. Most of these service users employ the Complete Motor Transportation Service, and the growth of this service is shown in the accompanying chart.

Program

The Council's program for Motor Transportation, which reaches over half a million fleet drivers monthly, is based on the standardization of accident definitions for reporting and analysis procedures. The definitions of "reportable" and "preventable" accidents have been accepted as standards for measuring group and individual safe driving performance. These definitions are basic in conducting the National Fleet Safety Contest and the Safe Driver Award.

In 1956, more than a quarter of a million fleet drivers will seek to earn "the nation's highest award for professional safe driving performance." Over 2000 fleets will compete in the National Fleet Safety Contest.

To assist the effective administration of fleet safety programs, the Council provides supervisory manuals and training guides as well as a full complement of in-service training and reminder materials including films, safetygraphs, booklets, magazines, safety instruction cards, dash cards and stickers, pamphlets and posters.

Trade Associations

By cooperating with trade and professional associations in the conduct of the National Fleet Safety Contest the Council has extended its program to many more fleets. Associations now sponsoring divisions of the National Fleet Safety Contest are the Milk Industry Foundation, National Automobile Transporter's Association, International Association of Chiefs of Police, American Gas Association, United States Brewer's Foundation, and Airline Ground Transportation Association.

Government Agencies

At national, state and local levels, government agencies are increasing their use of the Complete Motor Transportation Service. Among present users are the U. S. Post Office Department, state police and highway departments, city police and utility departments. Also several branches of the armed services make effective use of this service.

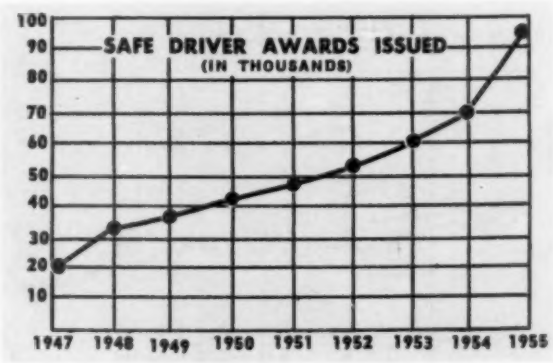
Enrollment of school bus fleets under the new service program is gaining momentum. At present, school bus drivers in all or part of 12 states are registered for this service.

Local Councils

Through special membership arrangements, local safety councils may offer the complete transportation service to fleets in their area on a "blanket service" basis. This arrangement gives local councils the opportunity of performing additional valuable services to their members and provides the nucleus for an aggressive fleet safety program at the local level. Here is an important area for study and progress during the coming year.

Marcus A. Dow Memorial Award

Established by the Council in 1951 in cooperation with the Greyhound Corporation, the Marcus A. Dow Memorial Award places emphasis on the need for high professional standards among fleet safety directors. The award, consisting of a plaque and $500, is given annually to the outstanding professional fleet safety engineer in the United States and Canada. Four awards have been made thus far. The award activity has enhanced the status of fleet safety directors everywhere.



Industrial Report

Over 16 million workers in more than 28 thousand locations now feel the impact of National Safety Council affiliation. This represents an occupational membership of over 7,000 drawn from manufacturing, transportation, construction, mining, trades and services, insurance, governmental agencies, and other organizations influential in carrying out programs of occupational accident prevention.

The Council's industrial program is intended to assist these organizations in their accident prevention activities. Highlights of the industrial program in the past year are reported here.

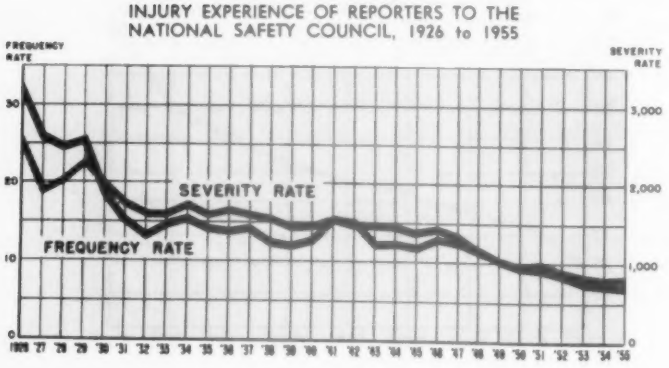
What Has Been Accomplished?

For 30 years the Council has encouraged business organizations to report their accident experience to the Council, so that trends in accidents could be determined and also that recognition could be given to those organizations with superior records. At present there are more than 9,000 reporters, four times as many as reported in 1926. The chart below shows the frequency and severity rates of reporters since 1926. Frequency has decreased 78 per cent; severity has decreased 67 per cent.

In 1955, for the first time in four years, the severity rate showed a slight increase—2 per cent —over the previous year. The frequency rate, however, showed a decrease again, as it has in the past nine years.

The frequency rate of Council members is about 40 per cent lower than the rate of non-members. This would indicate that the Council's industrial program is a factor in helping member organizations achieve better accident prevention experience than prevails in industry generally.

INJURY EXPERIENCE OF REPORTERS TO THE NATIONAL SAFETY COUNCIL, 1926 to 1955



The Industrial Conference

The Council's industrial program is directed by the Industrial Conference. The Conference, made up of 130 representatives from member companies and organizations and agencies cooperating in the industrial program, coordinates the work of the Council staff and of the executive committees of the Industrial Sections. Conference work is carried on by committees which endeavor to leave free scope for the work of the Industrial Sections on the special problems of their industry. Section activities are shown in the chart on pages 10-11. Programs directed by the Conference committees were initiated and maintained in the following areas during the year.

Safety Training

This past year five one-week courses in the "Fundamentals of Industrial Safety" were given at Council headquarters. One hundred seventy four students from the United States, Canada, and foreign countries attended. These courses covered such subjects as: how to develop a safe work force; industrial health hazards and controls; and organizing a safety program.

Two advanced courses were given, covering such subjects as: psychology for the safety man; conference leading; writing for the safety man; and public speaking. Forty seven students attended the advanced courses.

One course in "Fundamentals" was held at the University of Pittsburgh. A special one-week training course was also held at Council headquarters for supervisors in the public utilities industry.

In all, 254 students received certificates for Council training courses this past year. Over 2,000 certificates have been given by the Council since the courses were begun in 1946.

Survey of Safety Programs

The Member Opinion Committee of the Confer-

ence initiated in 1956 a survey to determine the types of accident prevention activities now being used in industry which produce best results.

The Rubber Section was the first to survey its members, and from an analysis of the results obtained it was apparent to other Sections that much could be gained from such surveys. Fifteen additional Sections are now conducting surveys of their members.

The surveys received will number in the thousands and should provide a composite picture of the requisites for an effective industrial safety program.

Codes & Standards

The Council cooperates with the American Standards Association in the development of safety codes and standards. Members of the Industrial Conference and Council staff are represented on seven ASA boards and policy groups. The Council sponsored or co-sponsored 16 codes and standards. And Council representatives have served on sectional committes for 57 codes and standards.

During the past year the Council was sponsor of the ASA Safety Code for Pulp & Paper Mills (Pl.1) and was co-sponsor of the ASA Textile Safety Code (Ll.1).

Congress Program

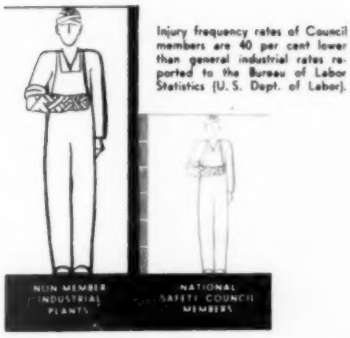
At the 1955 National Safety Congress over 500 speakers participated in more than 200 meetings on industrial safety subjects. The Program Committee of the Industrial Conference held two meetings during the year to see that the interests of the various Industrial Sections were satisfied and to determine what improvements might be made at future Congresses.

The Exposition of safety devices and equipment also embodied educational and research displays sponsored by the Conference. This feature, started two years ago, is now a permanent part of the Congress. Educational and research organizations in large number have applied for exhibit space.

Small Business Program

The Council's Small Business Program is reaching large numbers of small independent firms through associations, local safety organizations and other business groups.

Financed by a special grant, the Program is guided by the Small Business and Associations Committee of the Industrial Conference. In the past year a number of special materials were developed to stimulate and help groups which, in turn, can reach, inform, and help small firms.



Injury frequency rates of Council members are 40 per cent lower than general industrial rates reported to the Bureau of Labor Statistics (U. S. Dept. of Labor).

Safety Doesn't Happen. A film with accompanying discussion guide which outlines basic safety activities for a small company.

Signs of the Times. A brochure for association executives which suggests practical safety activities for groups of employers.

Seven Steps to Safety. A leaflet which summarizes basic safety principles. Designed for use by insurance companies, associations, and local groups in aiding small business firms.

Off-Job Safety

The Council's off-job program, under the direction of the Off-Job Committee of the Industrial Conference, has as its primary purpose the stimulation of employer groups in the problem of employee safety while away from work.

One aspect of the off-job program is to secure accurate records of off-job accidents. Regular monthly reports are now received from nearly 100 firms with employment of about 250,000. These reports are the basis for studies showing specific information on off-job accidents which are published periodically.

Publications Program

A major function of the Council's industrial program is to provide current technical information and training materials which are essential to effective industrial safety work. The following items are regularly produced to provide safety information to various levels of industrial personnel:

National Safety News for administrative and executive personnel.

Industrial Supervisor for foremen and supervisors. *Safe Railroader, Safe Worker, Safe Builder* for employees.

Section Newsletters one for each of the 28 Industrial Sections or Committees, containing articles of special application to the industry the Section serves.

In addition to these regularly-produced publications the following new materials were added to the Council's literature on industrial and related safety topics:

Employee-Training

Have a Good Time. 8 page booklet on vacation safety.

Get a Load of This. 16 page booklet on handling materials.

Flames I Have Known. 16 page booklet on fire prevention.

(Continued on page 12)

Industrial Section Activities

To fully appreciate the scope of the Council's industrial sectional activities one must visualize the more than 1,300 volunteer members of the 28 committees representing these industrial sections. The Council is indebted to the management of the member organizations who permit their representatives to participate in this cooperative accident prevention activity. More than 100 meetings of these committees were called during the last year, and as part of these deliberations the following important projects were initiated or completed.

SECTION	PROJECTS COMPLETED OR CONTINUING	PROJECTS INITIATED OR PLANNED
AERONAUTICAL INDUSTRIES	Three special surveys: (1) Handling Precautions for Normal Propyl Nitrate in Connection with Jet Aircraft Engine Starters; (2) Oil Smoke and Mist Encountered in Belt Grinding of Turbine Blades for Jet Engines; (3) Disposal of Chronic Wastes.	(1) Inventory of Occupational Accident Prevention Activities; (2) with Georgia Chapter ASSE data sheet, Mobile High Pressure for Pressurizing Aircraft Systems.
AIR TRANSPORT	(1) Safetygraph, Aircraft Fuel Servicing; (2) study, Personal Hazards in Servicing Airborne Radar Equipment.	(1) Two studies, Hazardous Cargo Handling, Airport Ground Facilities Safety Improvement; (2) Sectional safety contest to start in 1957.
AUTOMOTIVE & MACHINE SHOP	(1) Inventory of Occupational Accident Prevention Activities; (2) three studies—Tabulation on Data on Lifting Devices, Power Operated Hand-lift Trucks, General Machine Tool Safety Recommendations.	Development of stronger participation by members of the Section in the South and West; regional organization to provide for vice chairmen and sub-committees in these areas.
CEMENT & QUARRY	(1) Illustrated booklet, Safety Devices for Cement and Quarry Work; (2) data sheet revised, Lime; (3) off-the-job program developed and published in newsletter; (4) regular publicity releases to trade journals.	(1) Data sheet, Safe Operation of Conveyors; (2) Inventory of Occupational Accident Prevention Activities.
CHEMICAL	(1) Four data sheets, Acrolein, Adipic Acid, Anhydrous Aluminum Chloride, Inorganic Fluorides; (2) revised two data sheets, Respiratory Protective Equipment, Sodium; (3) survey on Chemical Injuries of the Eye; (4) special study, Solvents for General Cleaning.	(1) Three data sheets, Iodine, Metal Hydrides, Methyl Chloroform; (2) Inventory of Occupational Accident Prevention Activities.
COAL MINING	(1) Survey on Causes of Injuries from Falls of Roof; (2) special poster for National Campaign for the Prevention of Falls of Roof; (3) directory of films of interest to coal mining industry; (4) data sheet, Safe Operation of Belt Conveyors in Underground Mines.	Data sheet on safety specifications for shuttle cars; also safety specifications for other principal types of coal mining equipment.
CONSTRUCTION	(1) Proposed Manual for Signs, Signals and Markings for Highways Under Construction; (2) data sheets, Wind Damage to Concrete Block Walls, Rules for Construction and Operation of Material Hoists, Crane Boom Stops; (3) six pamphlets on Accident Prevention in Industry.	(1) Sixty articles on technical subjects for release as safety reprints or data sheets; (2) Inventory of Occupational Accident Prevention Activities.
ELECTRICAL EQUIPMENT	(1) Data sheet, Radio Transmitters; (2) two safety instruction cards.	(1) Organization of Associations Committee; (2) survey of electrical hazards to apprentices, and development of apprentice materials; (3) Inventory of Occupational Accident Prevention Activities.
FERTILIZER	(1) Study of worker motivations in fertilizer plants; (2) Picture of Safety Contest in cooperation with National Plant Food Institute; (3) Supervisor's Training Course for fertilizer plant supervisors.	Series of safety instruction cards and accident prevention folders.
FOOD	(1) Medical services program for the small plant; (2) reorganization of Sugar Contest to distinguish between plantation and refinery operations; (3) establishment of a Government Grain Handling Contest; (4) inauguration of semi-annual meetings to supplement Congress and Executive Committee sessions.	Program to secure more participation by Section members on Executive Committee; Section award plan to recognize best safety programming by Section member.
GLASS & CERAMICS	Data sheet, Radiant Heat Control.	(1) Four data sheets, Furnace Rebuilds, Exhausting Brick Saws, Furnace Room Fire Prevention, Air Replacement; (2) Inventory of Occupational Accident Prevention activities.

HOSPITAL SAFETY COMMITTEE	(1) Manual, Hospital Fire Fighting and Emergency Evacuation of Patients; (2) participation in hospital safety seminar sponsored by American Hospital Assn.	Plans for hospital poster contest.
MARINE	(1) Special contest for barge line operators, with American Waterway Operators; (2) preparation and promotion of industry-wide safety program for barge line operators, also with AWO.	Assistance to American Waterways Operators in safety program activities; manual for safety in waterways operations already prepared.
MEAT PACKING TANNING & LEATHER PRODUCTS	Script for color slidefilm, Packing Safety into the Hog Dressing Operations.	Inventory of Occupational Accident Prevention Activities.
METALS	(1) Data sheet, Magnesium; (2) sectional off-the-job reporting form.	(1) Manual on Field Operations in the Erection of Steel Plate, with the Steel Plate Fabricators Association; (2) set of safety instruction cards on Magnesium; (3) two data sheets; (4) "Gimmicks" booklet.
MINING	(1) A campaign for the prevention of falls of ground which produced a reduction of 29 per cent in these accidents. Materials included four booklets, 12 posters, one safetygraph, and 15 information sheets; (2) two films on safety in gypsum mines (with Gypsum Assn.)	Data sheet on safe practices in shafts.
OCC. HEALTH NURSING	(1) A highly successful sectional poster contest; (2) establishment of an Off-the-Job Committee.	Data sheets on first aid treatment when nurse is not available, use of oxygen in medical department.
PETROLEUM	(1) A series of meetings on petroleum safety in each of the five sectional divisions; (2) data sheet revision, Cleaning Small Containers That Have Held Combustibles (with ASSE); (3) slidefilm, Drum Handling.	Data sheet, LP Gas Operated Trucks.
POWER PRESS & FORGING	(1) Second draft, Manual on Power Press and Forging Safety; (2) three data sheets, Upsetters, Setting Up and Removing Forging Hammer Dies, Steam Drop Hammers; (3) revision of ASA Code for Power Presses, Foot and Hand Presses.	(1) Inventory of Occupational Accident Prevention Activities; (2) data sheet, Forming Rolls.
PRINTING & PUBLISHING	(1) Study Guide and Instructor's Guide for Safety Manual for the Graphic Arts Industry; (2) Graphic Arts Safety Training Kit (with Education Council).	(1) Printing solvents survey; (2) revision of Safety Manual; (3) two data sheets, Skid Piling Practices, Three-Knife Flat-Bed Trimmers; (4) Code for Bindery Tasks.
PUBLIC EMPLOYEE	Established a Legislative Committee to review any legislative matters affecting safety.	Inventory of Occupational Accident Prevention Activities.
PUBLIC UTILITIES	(1) Four data sheets, Reconditioning of Gas Transmission Pipe Lines, Truck Mounted Power Winches, High Pressure Gate and Plug Valves, Pole Handling; (2) two surveys, Lineman's Hand Signals, Truck Mounted Ladders; (3) poster set for AGA.	(1) Regional Training Course Program; (2) revision of four data sheets; (3) action to have study on lineman's hand signals adopted as an ASA code; (4) Inventory of Occupational Accident Prevention Activities.
PULP & PAPER	(1) Cooperated in review of booklet on Chain Saw Safety; (2) revised two data sheets; (3) four posters for pulpwood logging; (4) four safety instruction cards.	(1) Inventory of Occupational Accident Prevention Activities; (2) four data sheets; (3) Safety Manual for the Paper Industry.
RAILROAD	(1) Detail sheet, Blue Tag Board for Railroad Diesel Shops; (2) twelve posters; (3) twelve issues, Safe Railroader; (4) the 33rd Annual Green Book, report of Railroad Employees National Safety Contest; (5) cooperated in Signs of Life traffic safety program.	Fifty-two five-minute safety talks for railroad foremen.
RUBBER	(1) Bulletin on use of Isocyanates; (2) survey of Section off-the-job experience; (3) study of wind-up, chuck-collar safeties, and inch buttons for wind-ups; (4) data sheet, Vessel Entry in the Rubbery Industry; (5) data on fire safety problems and controls.	Inventory of Occupational Accident Prevention Activities.
TEXTILE	Safetygraph on Textile Industry Safe Practices.	(1) Series of seven data sheets on Textile Machinery; (2) three safetygraphs on Textile Safe Practices; (3) Inventory of Occupational Accident Prevention Activities.
TRADES & SERVICES	(1) Special posters for chain stores, mercantile establishments, hotels, and restaurants; (2) seven surveys on accident problems in mercantile, warehousing, and restaurant operations.	Addition of laundry, dry cleaning and rug cleaning division to Section; revision of Hotel Manual and inspection form.
WOOD PRODUCTS	(1) Booklet, Chain Saw Safety; (2) new data sheet, Saw Mill Headrigs; (3) revised two data sheets.	(1) Two data sheets; (2) special series of sawmill safety posters.

Fit as a Fiddle. 16 page booklet on physical fitness.

Falls Aren't Funny. 8 page booklet on conditions that cause falls.

Safety is No Accident. 16 page booklet on hazards encountered in industrial operations and how to guard against them.

Technical Publications

Supervisors Safety Manual. A 354 page manual directed at the foreman, emphasizing his role in the safety program. An instructors guide for this manual was also published.

Snakebite Manual. A 50 page manual dealing with protection against snakebite and first aid in the event of snakebite.

Book 6, Five Minute Safety Talks. A new edition of the series of books containing brief safety talks for use by foremen.

Data Sheets, Safe Practices Pamphlets, Detail Sheets, Safetygraphs. Data Sheets are detailed discussions of specific subjects. Safe Practices Pamphlets cover broad phases of accident prevention work. Detail Sheets are engineering drawings of safety devices which have proved effective in plant use. Safetygraphs are illustrated safety talks. These are continuing series of publications; production data for the past year is as follows:

	New	*Revised*	*Reprinted*
Data Sheets	23	7	28
Detail Sheets	21		50
Safe Practices Pamphlets		2	
Safetygraphs		3	4

Survey of Industrial Safety Courses in Universities and Colleges. Lists the colleges and universities offering courses in industrial safety.

Reprints of articles on safety from magazines in various fields are included in the Council's publications program.

Films

Friendly Machines. Safety principles in the operation of common industrial machines.

So You're New Around Here. Safety instructions for the new employee.

Down at the Office. Causes of falls in offices.

Drum Handling.

Vacation Safety.

Contests & Awards

An impressive improvement in safety records of Council members is indicated by a 9 per cent increase the number of awards given for perfect or outstanding records in 1955. A total of 2,170 awards were made, of which 1,584 were for perfect (no-accident) records. Over 9,300 business units participated in the Council's award program.

More than 1,700 awards were made to winners in the various categories in 22 Section contests in effect during the year.

American Society Of Safety Engineers

The American Society of Safety Engineers, the independent organization for professional safety engineers, maintains its national headquarters at the headquarters of the National Safety Council in Chicago. Though most closely associated with the Council's industrial program, the Society also has an active interest in the fleet and traffic safety areas since its membership includes engineers from these fields as well as industry.

Chapters of the American Society of Safety Engineers assist in the preparation of many of the Council's research and safety engineering publications. On the national level, the Society sponsors the general safety subject sessions at the annual National Safety Congress. Local Society chapters likewise aid local safety councils in the sponsorship of local and regional safety conferences.

The Council participates in the financial support of the Society in recognition of the importance of the professional society to the industrial safety movement.

The American Society of Safety Engineers presents its own detailed annual report to its members. A brief summary of Society activity during the last year is given below:

Society membership has been increased to a total of 6,640, a net gain of 176 members over last year.

Two new chapters have been chartered during 1956, bringing the total number of Society chapters to 61.

Chapters have completed five data sheets for the Council.

Chapters have completed one detail sheet for the Council.

More than 50 data sheet projects for the Council are in process of development in local chapters.

Investigation of financing possibilities is being made for five research projects selected for study.

The Albert D. Caddell Award for Chapter Achievement has been presented by the Society of its Western Pennsylvania Chapter for outstanding accomplishments in 1955.

Regional Achievement Awards for 1955 have been presented to the Greater Chicago Chapter, New Orleans Chapter, Boston Chapter, Los Angeles Chapter and Gulf Coast Chapter.

A new quartely technical magazine, The Journal of the American Society of Safety Engineers, has been published in cooperation with the Council as a separately-covered, bound-in section of the National Safety News. First issue of the Journal appeared in February, 1956.

Public Information Report

Public Information activities of the National Safety Council cannot be divorced from the work of the Council's program divisions and of the Council as a whole.

Therefore, other sections of this annual report contain the specific details of the Council's Public Information program in the fields of traffic, industrial, home, farm and school safety.

Goals of the Public Information program are:

1. To inform the public on the accident problem and what the public—individually and collectively—can do to help solve it.
2. To create an acceptance of the National Safety Council as the qualified leader of a social movement that is worthy of public support.
3. To cooperate with local safety organizations in making public information policies and materials effective at the community level.

To those ends, the Public Information Department of the Council provides specialists in techniques of communication with the public through all types of mass media. In a public relations sense, the department also provides internal guidance on policy which will create a favorable public image of the Council and the safety movement.

Public information effectiveness cannot be measured by mere quantity. However, the size of the Council's public information program is reflected in the following tabulation of media acceptance of the Council's material and services in 1955:

Newspapers. 1,250,000 inches of space.

Radio-TV. 250,000 broadcasts.

National Magazines. 84 articles on safety.

Trade Publications. 3,100 safety stories and features totaling 64,000 inches.

Employee Publications. 25,600 stories and features totaling 95,000 inches.

Advertising Council Cooperation

In addition to the wide acceptance by media of material provided by the Council, the Advertising Council obtains tremendous coverage through the "Stop Accidents" Campaign it conducts for the Council.

The Advertising Council reports that newspapers in 1955 used "Stop Accidents" Campaign ads as a public service for a total lineage of 7,835,000 —an increase of about 2,000,000 lines over 1954.

Council Magazines

The Council's magazines in various safety fields not only are technical journals for the professionals of safety, but also reach the general public with safety information. Each magazine is aimed at a specific group, but all inform their readers about the entire accident problem. The Council magazines are:

Title	Field	Circulation	54-55 Change
National Safety News	Occupational	32,892	+3%
Public Safety	Traffic	9,715	−3%
Safety Education	School	9,517	+23%
Industrial Supervisor	Occupational	152,619	+6%
Safe Worker	Occupational	430,643	+11%
Safe Driver	Comm. Vehicle	432,767	+9%
Safe Railroader	Railroad	80,024	−3%
Safe Builder	Construction	44,330	−5%
Home Safety Review	Home	1,939	−11%
Farm Safety Review	Farm	12,210	−55%

Council Posters

The Council posters are an important medium of public information on general as well as specific safety hazards. The scope of this activity is shown by the following figures:

Poster designs in stock at first of each year	750
New poster designs each month	25
Poster designs in stock at end of each year	1,050
Current annual circulation (unit sales)	11,700,000

Home Report

Accidents in the home caused 28,000 deaths and 4,200,000 injuries in 1955.

Various parts of the Council conduct program activities for the prevention of home accidents. Such activities are listed on the accompanying chart. A few major developments were as follows.

"Home Safety Review"

Professional and programming groups needed one all-inclusive source of information about home safety. Beginning in January 1956 the "Home Safety Review" was enlarged. Now local and state home safety ideas are given national circulation, and the magazine serves as a text for orientation and in-service training. Readers file their monthly copies to develop a cumulative reference of information about home accidents and the prevention of them, assistance for their own program analysis and evaluation, and program aids. The need for a full-size magazine in this field is evidenced by the congratulatory letters and the large volume of reports and articles submitted for publication.

Home Safety Inventory

Begun on an experimental basis in 1955, the Inventory was established in 1956 as a major operation. A specific procedure for developing state and local home safety programs was needed, and the Home Safety Inventory meets this need.

National, state, and local organizations are using the Inventory to promote cooperative home safety programs, and to develop procedures for determining which activities are most likely to be effective in the prevention of home injuries.

In every state, in some territories, and provinces of Canada, a state safety council or an official state agency is serving as a Home Safety Inventory Center. The more heavily populated counties and communities are conducting intensive local Home Safety Inventories. A special Inventory issue of the "Home Safety Review" was published in August. Forms on which to report 1956 home safety activities will be distributed in November, and reports will be collected in January and February, 1957.

The Council Function

The prevention of accidents in 40,000,000 homes requires a major program in which many organizations work together. Many official agencies, voluntary organizations, and industrial firms conduct activities which help to prevent accidents in the home. They know that their separate efforts become more effective when they work together. Representatives of these groups work together as the Home Safety Conference of the National Safety Council. Thus the Council functions as the meeting point for the home safety interests of official, voluntary, and industrial groups. Many examples of cooperative activities sponsored by the Council are shown on the accompanying chart.

The Home Safety Conference is growing in numbers and effectiveness as organizations use the Council for their "meeting point." Official agencies, voluntary organizations, and industries are expanding the portion of their safety programs which help families to prevent accidents in their homes. The 40 per cent drop in the rate of deaths from home accidents from 1928 to 1956 is a measure of the success of their individual and cooperative efforts.

ANALYSIS OF HOME SAFETY PROGRAM, 1955 - 1956

Programs which were in operation prior to mid-1955 are shown in black. New programs, program improvements, and current programs are shown in color. **Joint programs with other organizations are underlined.**

ACTIVITIES ▼ / FIELDS ▶	PROFESSIONAL PERSONNEL AND PROGRAM PLANNING GROUPS	DEVELOPMENT OF STANDARDS, CODES, ETC.	PUBLIC EDUCATION
INFORMATION ABOUT ACCIDENTS	Statistics Division: ACCIDENT FACTS (48,000) Current monthly death summaries Analysis of 5000 death certificates Analysis of 8 hospital and community surveys Home Division: FACTS ABOUT HOME ACCIDENTS (3500) Consultation on local surveys	Home Division: Development and inauguration of off-the-job reporting system 70 firms reporting home injuries of 250,000 workers Development of hospital report forms American Public Health Association, Subcommittee on Accident prevention — work on uniform definitions for statistics and program	Public Information Department—annual and other releases 1955 Congress publicity
INFORMATION ABOUT PREVENTION	HOME SAFETY REVIEW (2290) Enlarged to 32 pages, 8½ x 11 (4000) Articles in FARM SAFETY REVIEW (4000) Articles in SAFETY EDUCATION (10,000) Industrial Department—Off-the-Job Committee Labor Conference—Off-the-Job Safety Women's Conference Farm Conference: Contact with rural homemaker groups National Institute for Farm Safety Specialists Home Division: American Public Health Association membership on various committees National Health Council liaison	Home Division: National Fire Protection Association Committee on Wearing Apparel Lawnmower Institute—work on American Standards Association code for power lawnmowers, 871 Work with American Standards Association Z66, "Minimum Hazards to Children from Residual Surface Coating Materials" American Public Health Association Committee on the Hygiene of Housing, "Standards for Healthful Housing"	Public Information Department: 120 safety hints to 775 women's radio editors 228 safetygrams to 3081 radio & TV stations New campaign on home accidents —Advertising Council News syndicate features 17 articles in 9 national magazines (including 6 in March, 1956 issue of "Living for Young Homemakers") Assist in "Emergencies Won't Wait Week", 20 states and 20 cities
PROGRAM ANALYSIS AND EVALUATION	Home Safety Conference Home Safety Inventory: 1955 Inventory completed 1956 Inventory begun: 48 states and 62 cities Home Division: Co-sponsor of Ann Arbor Conference Joint Conference on Home Fire Prevention School Safety Inventory: Analysis and reports to 31 cities	Home Division: Assisted National Association of Home Builders, "Home of Safety"	Home Division: Boy Scout Safety Merit Badge revision Boy Scout Safety Good Turn planning
PROGRAM AIDS INCLUDING EDUCATIONAL TOOLS	School and College Division data sheets: 24 on home, family, etc. (165,000) Falls" (5000) "Home Workshops" (3000) NATIONAL SAFETY NEWS monthly page on off-the-job safety (30,000) Women's Division TARGETS (12,000) Home Division: 4 program planning packets: home, child safety, baby-sitter training, off-the-job safety (1750) Consultation on programs 3 reprints from 1955 Home Safety Inventory (7500) "Health Departments" "Community Organizations" "Industrial Off-the-Job" Published APHA survey, "Home Accident Prevention in Health Departments", (5000)		Home Division: Films (28) Miscellaneous leaflets (258,000) "Nice Going, Pop" (289,000) "Dennis the Menace on Safety" (900,000) "Do-It-Yourself Joe" (10,000) School and College Division: Lesson units (1,130,000) Posters (450,000) Films (415) Refrigerator campaign (387,000) Public Information Department: National Safety Council Calendar (530,000) Farm Division: Ladder leaflets (239,000) "Rural Women's Newsletter" (1800) Filmstrip—"A Step in the Right Direction" (45) "Home Management Prevents Accidents" (7000) Industrial Department: Films (76) Safetygraphs (139) Miscellaneous leaflets "Have a Good Time" (750,000) Safetygrams (24) Films (70)

Farm Report

This Is the Problem

The problem of accidental deaths and injuries to the nation's farm population remains a serious one. In 1955, the records show, about 13,000 rural residents met with death, and another 1,100,000 incurred costly injuries. The death rate per 100,000 farm residents was 58.5 in 1955, a marked decrease from the figure of 62.4 in 1950, but in increase over 1954 when the rate was 56.9. Great strides have been made to make the American farm a safer place to live and work, but there is still much to be accomplished. Some minor setbacks must be expected during the course of progress which must ultimately make farms and homes among the safest of all places to reside.

Progress in 1956

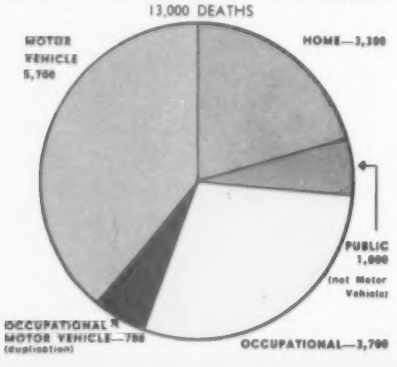
Organization

Five new members joined the ranks of the National Conference for Farm Safety. They are Miss Eunice Heywood, U. S. Department of Agriculture, Frank Reynolds, United States Steel Corporation, Ira Rogers, Jr., Automotive Safety Foundation, Dr. John Eklund, National Farmers Union, and Edward Adams of the Iowa Farm Bureau Federation.

During the three meetings held in the past year, members of the Conference considered technical safety problems and developed programs for promotion and education.

On the local level, three states organized new farm safety committees, bringing the total number of these to 38. The new committees are located in Washington, Georgia and Louisiana.

FATAL ACCIDENTS TO FARM PEOPLE



Farm Safety Clinic

For the first time a Farm Safety Clinic was included in the program for the President's Conference on Occupational Safety. More than 200 farm safety leaders attended the event which was held in Washington, D. C., from May 14 to 16. Farm Division staff members, in cooperation with the U. S. Department of Agriculture, took an active part in planning and carrying out the Clinic program.

Farm Safety Institute

"Rural Traffic Safety" was the theme adopted for 1957 during the Thirteenth National Institute for Farm Safety. This meeting was held May 16 to 18 in Washington, and attracted farm safety specialists from 10 universities, and representatives of farm organizations, industrial commissions, departments of education and other organizations. The Fourteenth Institute has been tentatively scheduled at Manhattan, Kansas, late in April, 1957.

National Farm Safety Week

"Safety Pays All Ways" was the theme of the 13th annual National Farm Safety Week which was held July 22-28 this year. To promote this event, the Farm Division distributed 14,000 packets of safety promotion materials in addition to supplying a huge quantity of leaflets, stickers, posters and other pieces in bulk form. In addition, 603 radio transcriptions, 93 films and 135 slides were distributed. A total of 4,923 mats were requested by newspapers, and 197 radio stations reported mentioning the week an estimated 1,000 times. Sixty-five advertisers cooperated by incorporating Safety Week materials in their space.

Rural Traffic Safety

The "Lite-Farm-Equipment" project went into its third year of operation. This is a national campaign to put reflective lighting materials on unlighted farm machinery which moves on public roads. During the past year the program has been expanded and reflective materials are being offered to youth organizations and other groups in all states. In the past the program was limited to

states with farm safety committees which agreed to sponsor the program.

Publications and Materials

Public information materials prepared and distributed by the Farm Division staff during the year included:

Farm Safety Review (Monthly Magazine)

Safe Farm Practice Leaflets:
Tractors and Traffic
Management Pays Off In Safer Families
Prevent Farm Fires
Farm Handling of Anhydrous Ammonia
Petroleum Products
The Farm Safety Story
Harvest Safely
You Can Be A Leader For Safety
Lightning Protection
Publicity—It Helps Sell Farm Safety
Planning Your Farm Electrical System
Woodlot Hazards
Discussion Starters

Filmstrip:
A Step In the Right Direction

Slide Set:
Tractors and Traffic

Booklet:
Farm Safety Demonstrations

The Farm Division during the past year initiated a radio tape service. This new feature makes available to Farm Radio Directors and Extension Service personnel a series of tape recordings on various farm safety topics. This service has been well received, and more than 400 requests for recordings have been filled. Because of its good reception, the tape recordings will be continued on a regular basis.

In addition, the Farm Division has continued its regular biweekly newsletter to Extension Publicity Directors and the monthly newsletter, "Yours For Safer Farm Families," to state and national leaders of rural women's organizations.

Plans for the Coming Year

An all out effort will be made to form at least four more state farm safety committees in the 10 states remaining without these organizations.

Special emphasis will be placed on the prevention of falls and on a rural traffic program. In these two campaigns, state farm safety specialists will cooperate and most state farm safety committees will participate.

Programs of special interest to rural youth will be emphasized with the hope of enlisting young people in safety work in increasing numbers.

In 1957 specifications and plans for at least one good safety exhibit will be prepared and made available. More emphasis will be placed on television materials and picture slides.

Extra emphasis will be placed with state committees in an effort to establish permanent accident reporting systems, first on a county basis and later on state-wide levels.

Because of the need for regional conferences, it is proposed that a few such meetings be held in 1957 with representatives of state farm safety committees attending.

The cooperative effort of safety-minded farm residents, agricultural and other organizations, has, down through the years, been the motivating force in reducing the huge toll from accidental deaths and injuries to farm people. To these workers, rural residents owe a great debt of gratitude. However, there lies ahead the tremendous task of cutting the toll still further. This will take even more of the fine cooperation that has existed in the past. This effort will make itself evident in very positive ways. Already the development of safety leadership among our young people is evidence of this growth. The coming year holds great promise for real advancement in the cause of safer farm living.

NATIONAL COMMITTEE FOR FARM SAFETY

. . . provides sponsorship and develops adequate, permanent support for the Council's work in farm safety. To constantly broaden the base of support for farm safety, the Committee is seeking cooperation and assistance of such additional groups as feed manufacturers, dairy manufacturers, meat packers, petroleum and insurance companies.

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Asst. to the Vice President
Goodyear Tire & Rubber Co.
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Kansas Farm Bureau
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ORGANIZATION

SCHOOL AND COLLEGE CONFERENCE Directs Program
98 members from national agencies, school systems and Council units

Published: "Research in Safety Education"

In process: Evaluation of Current Research
Criteria for Safety Education Materials
Implementation of Survey of Activities and Needs

SECTIONS AND COMMITTEES 380 active leaders; 1323 members

Active: Safety Education Supervisors Section
Driver Education Section
12 action committees

In process of organization:
Elementary School Section
Higher Education Section

STAFF School and College Division
6 Professional
4 Non-professional

Additional staff time of other Divisions on school activities equivalent to 15 persons

ACTIVITY PROGRAM

ACTIVITY	COMPLETED IN 1956	IN PROCESS	CONTINUING
SAFETY EDUCATION SUPERVISORS 497 Section members	Safety Charter for Children and Youth Now ratified by 10 organizations Published in 4 national magazines 4,650 copies distributed Basic Principles for Safety Education; 2,350 copies distributed	Job analysis for supervisors Personnel standards for state and county supervisors Fire safety education programs, status and goals	Information service for supervisors Speakers list Promotion of Standard Student Accident Reporting Study of School signs, signals and markings.
DRIVER EDUCATION 897 Section members	7 additional state driver education associations affiliated with Section. Total affiliation is now 18 of 33 state associations. Operation Safety Kit for High School Student Councils and Youth Groups	Model Facilities for Driver Education Model legislation for financing driver education Revision of Operation Safety Kit for 1957	Consultation service Clearing house service
COLLEGE AND UNIVERSITY 35 Committee members	Annual listing of safety courses for teachers, showing: 768 courses in 411 schools Survey of accidents to college students (With American College Health Association) Co-sponsored Third National Conference on Campus Safety Published proceedings	College and University Safety Newsletter Annual safety materials service and safety library	Field and consultation service
STANDARD STUDENT ACCIDENT REPORTING 15 Committee members	1955-56 Summary Tables of Pupil Injury Records At school—1955: Accidents 14,880; Enrollments 1,212,524 1956: Accidents 23,071; Enrollments 1,461,000 Non school—1955: Accidents 5,069; Enrollments 524,000 1956: Accidents 7,211; Enrollments 653,000	Revision of "Student Accident Records and Analysis" Form to guide preparation of detailed local studies of pupil injuries Encourage standardized terminology on insurance and council report forms	Improved accuracy and completeness of reporting Promotion of adoption of Standard Student Accident Reporting Encouragement of wider local use of collected data
SCHOOL TRANSPORTATION 50 Committee members	Revised memos on school bus accidents, color, stop laws Data sheets: "School Bus Safety—Administrative Problems" "School Bus Safety—Operating Practices" Consultant to New Mexico Institute, 800 drivers	Investigation of over-loading Study of value of seat belts in school buses	Publication of "The School Bus Supervisor" Circulation 4,250 Expansion of driver award program Now covered: All drivers in 2 states County groups in 12 additional states
NATIONAL SCHOOL SAFETY HONOR ROLL 7 Committee members	2488 Schools in 1956 Consecutive Years Listed / Schools / Representing Cities / Representing States 12th: 8 / 5 / 5 11th: 19 / 7 / 6 10th: 3 / 3 / 3 9th: 3 / 3 / 3 8th: 5 / 5 / 5 7th: 49 / 16 / 12 6th: 30 / 20 / 15 5th: 67 / 29 / 23 4th: 70 / 25 / 18 3rd: 277 / 67 / 18 2nd: 636 / 157 / 33 1st: 1320 / 469 / 42	Revision of college checklist School system award for 100 per cent participation Accident records analysis Participants vs. non-participants	Promotion to reach goal of 160,000 schools Every school in the nation!
PRACTICAL ARTS EDUCATION Joint committees with: American Vocational Association 16 members American Industrial Arts Association 10 members	4-H Club Leaders Handbook (a joint project) FFA Leaders Handbook (a joint project) Distributed 46,000 National Standard School Shop Safety Checklist Participated in 4 national, 5 regional and state conferences Conferences with 20 state supervisors	Safety Checklist for Home Economics	Safety sessions at: Annual Congress American Vocational Association American Industrial Arts Association Consultation service

ACTIVITY	COMPLETED IN 1956	IN PROCESS	CONTINUING
SERVICE TO CHAPTERS	School Safety Education in Cities A Survey of School's program Chapter's part in Program Based on 55 chapter cities Presentations through 52-page report Analysis in 31 cities	First supplement to report with emphasis on School crossing guards School zone signs and signals Standard student accident reporting Presentation of remaining analyses	Consultation and field service
STUDY OF SIGNS, SIGNALS AND MARKINGS FOR SCHOOL CHILD PROTECTION 12 committee members	Survey of Current Practice and Effectiveness By school authorities Based on 120 questionnaire returns By traffic authorities Questionnaire field tested in 23 cities	Complete traffic authorities section of survey Develop guiding principles from survey On effective and suitable types of signs, etc. To determine responsibilities	Consultation based on principles and covering: Standardization Respective responsibilities of each agency
SCHOOL PLANT PLANNING 36 committee members	"Responsibility for Provision of Safe School Environment" Adoption by National Council on Schoolhouse Construction "School Plant Safety References" Revised	Nontechnical school plant inspection form	Consultation service Cooperation with National Council on Schoolhouse Construction and Association of School Business Officials
DISCARDED REFRIGERATORS	Distributed: 387,000 Safety Education Data Sheets 422,000 Posters	Poster revision for 1957 campaign	Educational campaign to make cabinets harmless and keep children out of them
ANNUAL SAFETY CONGRESS 59 members on 2 committees	211 programmed participants 28 sessions 45 committee meetings Plans for Congress evaluation	The 1957 program	Strengthen programs Increase number of delegates Expand number of participants
ROY ROGERS AWARD 10 committee members	Screened and selected national and state winners		Improve promotion, reporting and analysis procedures
MAJOR PUBLICATIONS	Safety Education magazine Subscriptions—9,517 (28% increase) Safety lessons Subscriptions—125,000 monthly (43% increase) Posters (keyed to lesson units) Subscriptions—60,000 monthly (8% increase) Films (3 for secondary schools produced in 1955) Sales—151 Rentals—264 Safety Education Data Sheets 9 completed. 73 now available in bound volume or individually	1956-57 Safety Education magazine 1956-57 lessons and posters 9 Safety Education Data Sheets: School Bus Safety-Operating Practices Safety in Sports—General Practices Safety in Sports—Basket Ball Safety Practices for Extreme Weather Coordinating Safety in Industrial Education Programs Play Ground Surfacing Dangers of Amateur Electricians Camp Counsellors & Helpers	Improve all school publications Increase use

BROAD PROGRAM OF SUPPORT FOR SCHOOL AND COLLEGE SAFETY

RADIO AND MAGAZINE MATERIALS
120 Child Safety radio spot announcements
30 Safety Story Lady radio scripts
4 Special releases to education journals
20 pages of Public Safety magazine

SCHOOL PLANT INSPECTIONS
20 ASSE chapters inspected local schools

ACTIVITIES OF NSC REGIONAL FIELD STAFF
Aided in School Inventory
Served as liaison between local schools and School and College Division on technical problems

CAROL LANE AWARD. School activities reported by 55 groups and 41 individual participants

NATIONAL CAMPAIGN FOR PREVENTION OF FALLS
Established requirements for Honor Roll and Special Award
Promoted school participation

ANNUAL INVENTORY OF TRAFFIC SAFETY ACTIVITIES
School programs of 46 states and 1198 cities analyzed

BUILDING EXIT CODE. School Section Revised by NFPA Committee on Safety to Life

INDUSTRIAL SAFETY TRAINING
67 colleges offer industrial safety training in engineering courses

REGIONAL CONFERENCES ON TRAFFIC SAFETY
All included school program workshops

CONSULTING SERVICES

FIELD SERVICE by School and College staff
243 days
66 cities
25 states

PROFESSIONAL ASSISTANCE
Conference of: U. S. Office of Education
American Medical Association, Oklahoma Teachers Workshop
Boy Scouts of America—Merit Badge revision
Two national award programs

CONTINUING PROFESSIONAL RELATIONS WITH
Nat'l Congress of Parents and Teachers
Nat'l Congress of Colored Parents and Teachers
American Council on Education
Nat'l Society for the Prevention of Blindess

CORRESPONDENCE, OFFICE AND EXHIBIT CONSULTATION
6,000 technical inquiries answered by mail
20,000 general inquiries answered by mail
1,000 office consultations
672 consultations at American Association of School Administrators convention

SOME ACCIDENT PROBLEMS ALL COUNCIL SCHOOL AND COLLEGE ACTIVITIES SEEK TO SOLVE

DEATHS

Age 5-14 (1955)
Deaths 6,150;
up 200 from 1954
Rate 29.2 per 100,000
down 1% from 1954

Age 15-19 (1954)
Deaths 5,450;
down 550 from 1953
Rate 49.9 per 100,000;
down 11% from 1953

YOUNG DRIVERS
(Iowa State Study)

Age	Accident rate per 100,000 miles
16 to 21	1.5
22 to 27	1.0
28 to 47	0.7
48 to 65	0.6

SCHOOL BUS ACCIDENTS
(Reports from 36 states)
18 pupil passengers killed
17 killed before boarding or after alighting
1,306 pupils injured
1,125 total number of accidents

COLLEGE ACCIDENTS
(Special Study)
One student in 9 injured
Hospitalization for 1 in 15
60% injuries tabulated were on campus

State & Local Organization Report

The Conference

The Conference of Local Safety Organizations is made up of representatives of each of the state and community chapters of the National Safety Council. It provides a link between the national and local councils throughout the nation, a means of establishing policies and exchanging information on such problems as organization, administration, finance, and program. A roster of chapters, their presidents and managers, is found on page 34.

The most significant accomplishment of the Conference to date has been the development and general acceptance of basic principles and policies pertaining to state and local citizen safety organizations. These basic principles and policies have been adopted and given widespread application by the President's Committee for Traffic Safety and the Businessmen's Advisory Panel of that Committee.

Council Service to State and Local Organizations

All program divisions of the Council have responsibilities in their respective program areas for work with and through state and local safety councils. Throughout this report are references to the work in traffic, industrial, home, school, and farm accident prevention which are carried forward cooperatively with local groups.

All these activities are coordinated by the Field Service Department which has the following additional major functions:

1. Work with state and local officials and citizen groups utilizing the Annual Inventory of Traffic Safety Activities (see page 3).
2. Assist existing local organizations.
3. Assist in the organization of new state and local safety councils where none exist.
4. Provide a secretariat for the Conference of Local Safety Organizations.

Field Service Personnel

At present the department employs a total of 14 professionals with four working in and from headquarters, and 10 assigned to geographical districts. Deployment of district representatives is shown on the map on page 44.

It is recognized that this limited field force is not commensurate with the magnitude of the department's assigned responsibilities, and it is anticipated that as additional funds are available, additional field men will be employed.

With the increased emphasis being placed on state and community organization by the four Regional Conferences of the President's Committee for Traffic Safety and by the Businessmen's Advisory Panel, there are now unprecedented opportunities for effective exploitation of interest in the solution of accident problems through organized citizen action in the states and communities of the nation. The Council is now receiving more requests for assistance than it can fully meet.

Activities

In 1956 the most important new organization to be formed was the California Traffic Safety Foundation which formally opened its offices August 11, 1956. This event was the culmination of many months' effort by National Safety Council staff working with top business and official leadership in California. The new Foundation will have an annual budget in excess of $250,000.

The Foundation's organization plan is notable for its careful provision for appropriate conference and committee representation for key groups. For example, it has a Program Planning Panel for local safety organization managers.

Concurrent with work on new organizations, the Council seeks to upgrade existing organizations. During 1956 two training institutes were held for state and local managers, one at New York University in cooperation with the Center for Safety Education, and the other at Council headquarters.

The two-day Annual Meeting of local council managers in Chicago preceding the National Safety Congress provides a forum for discussion of problems of local organization, administration, program, and finance.

On request, the Council provides an on-the-ground survey and appraisal of any chapter's operation, together with specific recommendations for improvement.

STATE AND LOCAL SAFETY ORGANIZATIONS

Chapters of the National Safety Council. There are 62 chapters with full-time staff operating in cities of over 50,000 population. There are 10 state chapters and 2 chapters in Canada. There are 9 chapters in smaller communities, including those with part-time management. The 81 U. S. chapters in 1956 employed a total of more than 240 full-time staff. Their aggregate income was over $1,500,000.

Other Local Organizations. In addition to chapters a total of 173 local safety organizations are affiliated with the Council. These are chiefly volunteer organizations (no paid staff) in smaller communities. They regularly receive Council services and publications. Approximately 235 additional community safety organizations, primarily traffic groups in smaller communities, though not affiliated with the Council, are operative.

Women's Activities Report

The Council has been called on by women's and parents' organizations from the national, regional, state and local level for assistance in planning safety programs. The major part of this work has been through correspondence with limited field service to 15 cities in 9 states during the year. Information and consultation has been given in reply to requests from hundreds of groups seeking help.

Three periodicals have continued to be a primary means of reaching women's groups:

"Targets for Home Safety"
"Targets for Traffic Safety"
"Chartered for Safety"

The Women's Activities Division participated in the four regional conferences of The President's Committee for Highway Safety in Atlantic City, Miami Beach, Chicago and San Francisco, with the staff director serving as consultant.

Carol Lane Awards

1956 marks the fifth year of the Carol Lane Awards program which provides national recognition to individual women, and to women's organizations and parents' groups, for outstanding traffic safety activities. With a 100 per cent increase in entries received over 1955, the influence and effectiveness of the Carol Lane Awards is revealed in an ever greater number of intelligently-planned programs and an imposing list of accomplishments in the traffic field.

The 1956 top Individual Winner single-handedly arranged vehicle safety check programs in nine communities of less than 1,000 population in her county in a Midwestern state; and she was instrumental in starting teen-age drivers clubs in every one of the county high schools.

The 1956 top Group Winner — a professional women's club barely two years old located in a Southern state, planned and worked out with school, city, and state authorities a driver education program (including behind-the-wheel training) which was set up in eight high schools in 1955 and will reach three more in 1956.

Labor Activities Report

Labor has participated more and more actively in the work of the Council in the last 20 years, and has had a representative on the Board of Directors for a number of years.

In recent years labor has been sufficiently active to warrant a more formal place in the Council's structure. The Labor Conference was formally organized in April, 1956 following adoption of the report of a special study committee by the Board of Directors, late in 1955.

The findings of the Committee relating to labor organizations read in part:

> Labor organizations are important elements in American life that exert far reaching influence on the thought and action of a very large segment of the population. They have a large interest in all areas of safety, and they are willing to participate in accident prevention work in appropriate areas. When their interest and activities are properly coordinated with other safety activities of the National Safety Council, they will be a very important force in the safety movement.

The committee recommended that a Labor Conference be established and that the office of Vice President for Labor be created. To implement the action of the Board, a staff Labor Division has been created.

The work of the Labor Conference and Labor Division has been mostly organizational in nature. Accomplishments to date include:

Adoption of a statement of "Function, Scope and Policy of the Labor Conference."

Establishment of Conference working committees — Publications, Congress Program, Membership, and Newsletter.

Arranging for a National Safety Congress program (two full morning sessions).

Membership promotion in cooperation with several national unions.

Early publication of a safety newsletter for labor unions.

An inventory of labor union safety activities (under development).

PART TWO

The Council's Organization

Reports on the status of the Council's volunteer groups, staff personnel, finances, and other aspects of its operations in 1956

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Structure & Objectives

The National Safety Council was founded September 24, 1913. It operated as an unincorporated association until October 1, 1930, when it was incorporated in the State of Illinois under the General Not-for-Profit Corporation Act.

On August 13, 1953, President Dwight D. Eisenhower approved an Act of Congress which created the National Safety Council as a body corporate under Federal law. The Incorporation Act is officially identified as Public Law 259, 83rd Congress, Chapter 429, First Session, S.1105.

As stated in Section 3 of the Federal Charter, the objects and purposes of the Council are:

> To further, encourage, and promote methods and procedures leading to increased safety, protection, and health among employees and employers and among children, in industries, on farms, in schools and colleges, on streets and highways, in recreation, and in other public and private places.
>
> To collect, correlate, publish, distribute, and disseminate educational and informative data, reports, and all other data relative to safety methods and procedures.
>
> To arouse and maintain the interest of the people of the United States, its territories and possessions in safety and in accident prevention, and to encourage the adoption and institution of safety methods by all persons, corporations, and other organizations.
>
> To organize, establish, and conduct programs, lectures, conferences, and other activities for the education of all persons, corporations and other organizations in safety methods and procedures.
>
> To organize and aid in the organization of local safety chapters throughout the United States, its territories and possessions, and to provide organizational guidance and materials to promote the national safety.
>
> To cooperate with, enlist, and develop the cooperation of and between all persons, corporations, and other organizations and agencies, both public and private, engaged or interested in, or in any manner connected with, any or all of the foregoing *and*—
>
> To do any and all lawful acts which may be necessary, useful, suitable, desirable, and proper for the furtherance, accomplishment, and attainment of any or all of the foregoing purposes.

Membership

The Council is a membership organization. Membership is open to any person or organization wishing to further the objects and purposes of the Council and agreeing to its principles. At present there are over 12,000 members, such as industrial and manufacturing companies, transportation companies, insurance companies, schools, local safety organizations, trade and labor organi-

zations, civic organizations, departments of city, state, and national government throughout the United States, Canada, and many foreign countries.

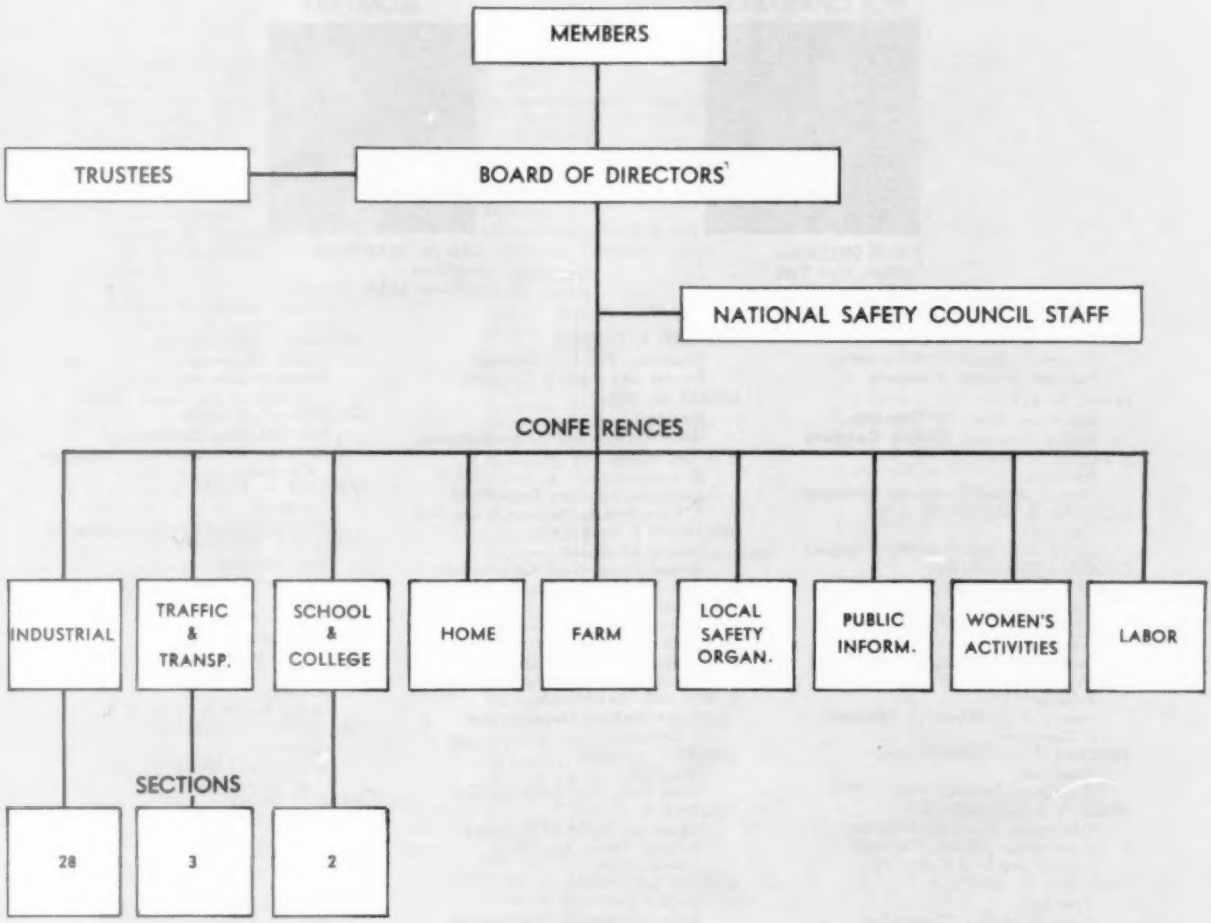
Governing Structure

The Council is governed by the Trustees and Board of Directors, which are elected by the membership, and by the Program Conferences, and the committees of the numerous Sections. Each Council member has one vote, and members whose annual dues are in excess of $25 have an additional vote for each $25 of annual dues.

Volunteer Workers

Altogether over 2,500 men and women serve on a volunteer basis on Council committees and other governing bodies. Not only do these volunteers determine Council policies and programs, but also help to develop technical and educational materials. For these volunteers are largely safety engineers, industrial hygienists, training experts, and other specialists drawn from the ranks of industry and government. Their total contribution to the Council's service activities and programs is inestimable.

GOVERNING STRUCTURE



The Trustees

direct the special solicitation of funds from public or private sources to support the Council's general activities, and have authority over the disbursement of such funds.

"The American public and American business are called upon to give financial support to many worthy causes. While the appeals for funds may sometimes seem numerous, I believe that they reflect a very important feature of our national character. Certainly, they are tangible proof that we are willing to do something for ourselves about such matters as health, alleviation of distress, and accident prevention, instead of leaving everything up to the government. As Chairman of the National Safety Council's Trustees, I am especially interested in getting people to *do* something about accident prevention by supporting our public service program."

—W. S. S. Rodgers

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is responsible for the general policies and program of the Council.

"We are a growing nation—more people, more business, more travel, more of nearly everything. That means that every year we have more of an accident problem. This is a challenge which the Directors of the National Safety Council have accepted head on. We are determined to marshall the necessary forces to reduce accidents. We seek help from men and women in all walks of life; we seek the interest and activity of all kinds of organizations; we seek wider support from industry; and we pledge our best efforts in assisting all officials, agencies and organizations in preventing accidents." —*Clifton W. Phalen*

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Industrial Conference

"The continued success of efforts to reduce human suffering and economic loss as a result of occupational accidents is due to the cooperative efforts of many people. The National Safety Council acts as a catalyst in this effort but the result is the product of cooperative action by a generation of workers educated to be safety-minded, and enlightened industrial management. Still, we cannot be complacent about past accomplishments; 1955 brought 10,500 occupational deaths (not including agriculture), which was 300 more than in the preceding year. The best efforts of all of us are necessary to reduce this toll."

—Donald G. Vaughan

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F. O. SOUGHTON
Services & Safety Supvr.
LongLac Pulp & Paper Co., Ltd.

S. F. SPENCE, Dir.
Safety & Loss Prev.
American Cyanamid Co.

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Industrial Relations
The Youngstown Sheet & Tube Co.

GEORGE H. STEEL
Safety Director
Ralston Purina Co.

LILLIAN STEMP
Industrial Consultant
Whiting, Ind.

J. M. SHANAPHY
Asst. General Manager Transportation
Railway Express Agency, Inc.

REUEL C. STRATTON, Asst. Supt.
Engineering & Loss Control Div.
Travelers Insurance Co.

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Director of Safety
Southern Dairies, Inc.

COL. W. L. TUBBS (ret.)
Assistant for Ground Safety
U. S. Air Force

A. F. TYRA
Head of Safety Div.
Industrial Relations Dept.
Union Carbide & Carbon Corp.

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Director of Safety
Mead Corp.

LEA P. WARNER, JR.
Director of Safety
Warner Company

C. H. WEISER
Plant Personnel Sup. (ret.)
Southwestern Bell Tel. Co.

JOHN J. WHALEN
Safety Engineer
Solvay Process Div.
Allied Chemical & Dye Corp.

J. T. WILLIAMS
Safety Engineer
Bunker Hill & Sullivan Mining & Concentrating Co.

JEROME J. WILLIAMS
Safety Director
Morrison J. Knudson Co., Inc.

R. F. WILSON, Supvr.
Saf. & Plant Prot.
Oliver Iron Mining Div.
United States Steel Corp.

W. O. WILSON
Manager of Safety
Standard Oil Co. (Ind.)

E. C. WOODWARD
Safety Director
A. O. Smith Corp.

DR. W. P. YANT, Dir.
Research & Development
Mine Safety Appliances Co.

JOHN W. YOUNG
Consultant, Industrial Safety
International Harvester Co.

CHARLES R. ZESKEY, JR.
Chief Engineer
T. H. Mastin & Co.

CARLTON L. ZINK
Research Engineer
Products Research
Deere and Co.

Traffic & Transportation Conference

"For the first time in several years traffic deaths in 1956 increased at a greater rate than motor vehicle travel, resulting in an increase in the death rate over 1955. We therefore can no longer take the dubious comfort we have in the past from improvement based upon exposure despite increase in total deaths. To an even greater extent, the worsening traffic problem now imperatively requires strong official leadership backed by organized citizen support. Through such joint action traffic deaths can be cut by half."

—Franklin M. Kreml

Vice President for Traffic & Transportation: Franklin M. Kreml, Director, Transportation Center, Northwestern University

Chairman: T. N. Boate, Manager, Accident Prevention Department, Assoc. of Casualty and Surety Cos.

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American Standards Association

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Delaware Safety Council

RAY ASHWORTH, Acting Dir.
Northwestern University Traffic Institute

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Dir., Health Education
American Medical Association

K. N. BEALE
Dir. of Safety
Pacific Inter-Mountain Express

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National Assn. of Automotive Mutual Insurance Cos.

MRS. P. D. BEVIL
National Safety Chrm.
National Congress of Parents & Teachers

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Society of Automotive Engineers

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Institute of Aviation
University of Illinois

D. S. BUCK, Safety Director
Office of the Chief of Transportation
Dept. of the Army

ROBERT D. BUGHER, Asst. to Director
American Public Works Association

FRED BURGGRAF, Director
Highway Research Board

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California Highway Patrol

A. W. CANTWELL
Natl. Dir., Safety Services
American Red Cross

W. A. CATANACH, Asst. to Chrm.
Eastern Railroad President's Conference

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Lions International

HARRY P. COOPER, JR. Secretary
National Assn. of Mutual Insurance Cos.

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Chief, Section of Safety
Bureau of Motor Carriers
Interstate Commerce Commission

ROGER L. CREIGHTON, Asst. Director
Chicago Area Transportation Study

NORMAN DAMON, Vice President
Automotive Safety Foundation

M. R. DARLINGTON, JR., Mng. Dir.
Inter-Industry Highway Safety Comm.

J. E. P. DARRELL, Traffic Engineer
Minn. Department of Highways

HARMER E. DAVIS, Dir.
Inst. of Transp. & Traffic Engineering
University of California

WM. J. DAVIS, Secy. & Mgr.
Natl. Automobile Theft Bureau

JAMES P. ECONOMOS, Director
Traffic Court Program
American Bar Association

C. ARTHUR ELLIOTT
County Engineer
Jefferson, Iowa

E. J. EMOND
Director of Automotive Safety
Armour & Co.

W. T. GOWENS
Dir. of Safety & Pers.
Pilot Freight Carriers, Inc.

W. M. GREENE, Director
Connecticut Safety Commission

W. L. GROTH, Director
Dept. of Public Safety
Richmond, Va.

H. K. HALBROOKS
Dir., Accident Prevention Div.
National Automobile Transporters Assn.

LAWRENCE HAPGOOD
Dir. of Activities
Kiwanis Internatonal

L. S. HARRIS, Exec. Director
American Assn. of Motor Vehicle Admin.

J. B. HARTRANFT, JR.
President & General Manager
Aircraft Owners & Pilots Assn.

PATRICK HEALY, JR., Executive Director
American Municipal Association

J. P. HIGHTOWER
Gen. Safety Director
Greyhound Corporation

DAN HOLLINGSWORTH, Manager
Oklahoma City Safety Council

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Bureau of Public Roads

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Governors Traffic Safety Committee
Sacramento, Calif.

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American Mutual Liability Ins. Co.

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Interstate Motor Freight System, Inc.

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Post Office Dept.

JEROME LEDERER, Managing Director
Flight Safety Foundation

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Director of Traffic Safety
Indianapolis, Ind.

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Engineering Dept.
Hartford Accident & Indemnity Co.

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Assistant to President for Pub. Rels.
Independent Military Air Transport Assn.

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Michigan State Highway Dept.

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Traffic Engineering & Safety Dept.
American Automobile Assn.

ADMIRAL H. B. MILLER, Director
President's Committee for Traffic Safety

JOHN O. MOORE, Director
Automotive Crash Injury Research
Cornell University Medical College

DON E. MUMFORD, Director of Safety
New York Central System

JUDGE ALFRED P. MURRAH
U. S. Court of Appeals
Oklahoma City, Okla.

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New Orleans Public Service, Inc.

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National Assn. of Insurance Agents

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Ofc. of the Judge Advocate General
Department of the Navy

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Village Manager
Riverside, Ill.

JAMES S. OSBORNE, General Manager
Cincinnati, Newport & Covington Transp. Company

F. J. PARKER, Secretary, Safety Sec.
Assn. of American Railroads

HARRY M. PONTIOUS, Safety Director
Nationwide Insurance Co.

STEPHEN P. POTTER, Publicity Manager
American Petroleum Industries Comm.
of the American Petroleum Institute

HON. THOMAS M. POWERS, Judge
Municipal Court
Akron, Ohio

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Citizens' Traffic Safety Board
GEN. EUGENE REYBOLD
Exec. Vice President
American Road Builders Assn.
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Field Service Department
Automobile Manufacturers Assn.
CLARENCE N. SAYEN, President
Air Lines Pilots Assn., Intl.
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United Motor Coach Co.
T. J. SEBURN, Research Associate
Yale Bureau of Highway Traffic
J. M. SHANAPHY
Assistant General Manager, Trans.
Railway Express Agency
WM. J. SIMON, Safety Coordinator
National Highway Users Conference
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Traffic Safety Assn. of Detroit

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American Trucking Assns., Inc.
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Allstate Insurance Co.
DR. HERBERT J. STACK, Director
Center for Safety Education
New York University
S. G. TIPTON, General Counsel
Air Transport Assn. of America
DAVID M. BALDWIN, Exec. Secy.
Institute of Traffic Engineers
J. H. WASPI, Director of Safety
Allied Van Lines, Inc.
LEO R. WELCH, Acting Director
Bureau of Traffic Safety
Trenton, N. J.
L. J. WHITEHEAD
Director of Compliance & Safety
Strickland Transportation Co., Ltd.
N. K. WOERNER, Chief
Statistical Division
Texas Dept. of Public Safety

T. T. WILEY, Commissioner of Traffic
City of New York
T. H. WILKENSON, Safety Director
Ofc. of the Deputy Chief of Staff
for Personnel
Department of the Army
LT. COL. G. C. WILLIAMS, Chief
Enforcement Br. Opers. Division
Ofc. of the Provost Marshal General
Department of the Army
D. L. WILLIAMSON
Supt. of Safety Training & Instruction
Kansas City (Mo.) Public Service Co.
LT. COL. WILLIS H. WOOD
Exec. Ofcr. of the Assistant for
Ground Safety Office
United States Air Force
HERBERT WILTSEE
Regional Representative
Council of State Governments

School & College Conference

"Your Vice President for Schools and Colleges writes this brief annual message with mixed emotions: (1) Of gratitude for all people everywhere who are striving to make life safe, yet adventuresome, for all of our children and youth. (2) Of appreciation for those leaders of the National Safety Council whose cooperation made possible the expansion of the School and College Division staff. (3) Of grave concern over the indication that all that we are doing may not be enough. While there was no change in the accidental death rate for children 5 to 14 years old, there was an increase in the total number of deaths among them. If we are to hold our ground we must double—yes, triple—our efforts."

—Lowell B. Fisher

Vice President for Schools & Colleges: Lowell B. Fisher, University of Illinois

Chairman: Norman E. Borgerson, Deputy Superintendent, Michigan Department Public Instruction

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DALIBOR W. KRALOVEC, Assistant Director of Safety Education, Philadelphia, Pennsylvania

VICE CHAIRMAN FOR SECONDARY EDUCATION
RALPH STINSON, Supervisor, Secondary Education, Kansas Department of Education

VICE CHAIRMAN FOR HIGHER EDUCATION
JOHN W. HILL, Director, Workmen's Compensation Insurance, Texas A & M College

VICE CHAIRMAN FOR SUPERVISION AND SPECIAL AREAS
FORREST GAINES, Supervisor of Safety Education, Louisiana Department of Education

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Zenas Clark
J. Duke Elkow
Lonnie Gilliland
James J. Griffin
John W. Hill
Mrs. Fred Knight
James W. Mann
Ronald Patterson
Leslie Silvernale
Genevieve Squires
Virginia Wheeler
Mary May Wyman

ORGANIZATIONS AND AGENCIES INTERESTED IN EDUCATION AND SAFETY

Accident Prevention Department of the Association of Casualty and Surety Companies
PRICE CLARK
American Academy of Pediatrics
JOSEPH R. CHRISTIAN, M.D.
American Association for Health, Physical Education and Recreation
A. H. PRITZLAFF
CLIFFORD LEE BROWNELL
American Automobile Association
HELEN KNANDEL
American Council on Education
FRANK C. ABBOTT
ARTHUR S. ADAMS
American Dental Association
PERRY SANDELL
American Home Economics Association
SARAH MINER
MILDRED HORTON
American Industrial Arts Association
DONALD PETERS
PAUL HARRISON
American Medical Association
W. W. BAUER, M.D.
FRED V. HEIN
American School Health Association
IRIS BOULTON
American National Red Cross
EARL H. BREON
EDWARD A. RICHARDS
American Vocational Association
M. D. MOBLEY
J. E. TEPOORTEN
L. A. BURKETT

Association for Supervision and Curriculum Development
NORMAN GORE
ROBERT ZIMMERMAN
Association of American Railroads
F. J. PARKER
Association for Education by Radio—Television
GEORGE JENNINGS
Association of School Business Officials
DON GAVIT
CHARLES FOSTER
Automotive Safety Foundation
STEPHEN JAMES
Boy Scouts of America
DONALD M. HIGGINS
Camp Fire Girls
GORDON D. SMITH
Center for Safety Education
HERBERT J. STACK
Federal Civil Defense Administration
PAUL MILLER
Girl Scouts of the United States of America
MARY WEEKS
National Aviation Education Association
EVAN EVANS
RICHARD JOHNSON
National Board of Fire Underwriters
F. W. WESTERVELT, JR.
National Catholic Education Association
MONSIGNOR FREDERICK G. HOCHWALT
ALFRED L. PAPILLON
National Congress of Parents and Teachers
MRS. P. D. BEVIL

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School & College Conference, continued

National Council of Chief State School Officers
HAROLD K. JACK
NORMAN E. BORGERSON
National Council on School House Construction
THOMAS J. HIGGINS
National Federation of State High School Athletic Associations
FRED L. BIESTER
H. V. PORTER
National Fire Protection Association
PERCY BUGBEE
DALE AUCK
National Rifle Association
STANLEY A. MATE
National School Boards Association
WILLIAM A. SHANNON
ARTHUR MARSHALL
North Central Association of Colleges and Secondary Schools
LOWELL B. FISHER
RALPH STINSON
United States Junior Chamber of Commerce
WARREN TAYLOR
RALPH PETERS
United States Office of Education
N. E. VILES
ELSA SCHNEIDER

SECTIONS

Driver Education Section
H. J. STACK
EDWARD ABROMOSKI
Safety Education Supervisors Section
FORREST GAINES
CECIL ZAUN

COMMITTEES

Campus Safety Committee
JOHN W. HILL
THEODORE E. HALEY
CLAYTON DEMENT
National School Safety Honor Roll
FORREST E. LONG
Standard Student Accident Reporting Committee
THELMA REED
School Transportation Committee
O. P. RICHARDSON
School Plant Planning Committee
THOMAS J. HIGGINS
Roy Rogers Advisory Committee
THELMA REED
ZENAS CLARK
Safety Education Magazine Advisory Committee
HAROLD K. JACK
Congress Program Committee
MELVA LIND

LIAISON REPRESENTATIVES FROM OTHER CONFERENCES

Farm Conference
RANDALL SWANSON
Home Conference
WALTER CUTTER
Industrial Conference
W. G. HAZARD
Conference of Local Safety Organizations
HAROLD LILLIE
Public Information Conference
GEORGE JENNINGS
Traffic and Transportation Conference
M. R. DARLINGTON, JR.

Home Conference

"We are still in the process of finding out 'who is doing what for home safety.' It is gratifying to note the increasing activity in home safety by a wide variety of national, state, and local organizations; and the Home Conference is constantly pressing toward identifying and concentrating on effective programs, which will develop for Home Safety the standards and controls so essential for safety in any area where people abide." —*Walter A. Stewart*

Vice President for Homes: W. A. Stewart, President, American Optical Company

Chairman: D. E. Mumford, Manager of Safety, New York Central System

VICE CHAIRMAN HOME BUILDING AND EQUIPMENT
MISS EDITH RAMSAY
Home Equipment Editor
The American Home

VICE CHAIRMAN HEALTH AND MEDICAL
FRED LONG, M.D.
American Public Health Association

VICE CHAIRMAN COMMUNITY SERVICE GROUPS
MISS MARY M. WEEKS
Health and Safety Adviser
Girl Scouts of the U.S.A.

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Delaware Safety Council
DALE K. AUCK, Director
Fire Prevention Division
Federation of Mutual Fire Ins. Co.
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Bureau of Health Education
American Medical Association
THOMAS J. BERK, Safety Consultant
Metropolitan Life Insurance Co.
MRS. P. D. BEVIL, Chairman
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National Congress of Parents & Teachers
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Associate Director
Bureau of Health Education
American Medical Association
MISS RUTH A. BOTTOMLY
Director of Office
National Congress of Parents and Teachers
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Better Homes Bureau
Westinghouse Electric Corporation
JACK W. BRUCE
Assistant Vice President
U. S. Savings & Loan League
PERCY BUGBEE, General Manager
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National Director
Safety Services
American National Red Cross
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New York University Center for Safety Education
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Director, Women's Division
New Jersey State Safety Council, Inc.
MISS ESSIE L. ELLIOTT
Vice President for Home Safety
Greater Los Angeles Chapter
National Safety Council
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Bureau of Public Health
Equitable Life Assurance Society
MISS RUTH FISHER, Director
Dept. of Public Health Nursing
National League for Nursing, Inc.
E. M. GEARHART, JR., Director
Spokane Area Safety Council
JAMES L. GODDARD, M.D., Chief
Accident Prevention Program
U. S. Public Health Service
LEONARD G. HAEGER, AIA
Technical Director
Levitt and Sons, Inc.
FAY M. HEMPHILL, Ph.D.
School of Public Health
University of Michigan
E. V. HERRINGER, Sanitary Engineer
U. S. Public Health Service
MISS EUNICE HEYWOOD
Asst. Director
Division of Home Economics Programs
U. S. Department of Agriculture
DONALD M. HIGGINS, Director
Health and Safety Services
Boy Scouts of America
RICHARD HUDSON
Skytop Engineering Company
RALPH JOHNSON, Director
Construction Dept. & Research Institute
National Association of Home Builders
J. CHARLES JUDGE, Chief
Home Accident Prevention Unit
Maryland State Department of Health
MISS ELIZABETH KASEY
Safety Consultant
Safety & Occupational Health Bureau
Metropolitan Life Insurance Company
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American Academy of Pediatrics
JAMES M. LANGE, Executive Editor
Practical Builder

JAMES T. LENDRUM, Director
U. of Ill. Small Homes Council
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American Public Health Association
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Building Coordination
American Radiator & Standard Sanitary Corp.
HARRY MARCHMONT-ROBINSON, M.D.
American Academy of General Practice
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Greater New York Safety Council, Inc.
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Home Service Director
Rochester Gas & Electric Company
ANDREW PLACE, President
Place Construction Company
E. D. PULLIAM, Supervisor
Home Accident Prevention Section
Kentucky State Department of Health
MISS EDITH RAMSAY
Home Equipment Editor
American Home

MRS. SALLY RANKIN
Director, Home Division
Louisville Safety Council
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Home Safety Project
California State Dept. of Public Health
TYLER S. ROGERS
Technical Consultant
Owens-Corning Fiberglas Corporation
HAROLD D. ROSE, Chief
Home Accident Prevention Program
Massachusetts Dept. of Public Health
C. M. ROWLEY, Chief Engineer
American Manufacturers Mutual Ins. Co.
MISS ROSEMARY SCHAEFER, Chairman
Safety Committee
American Home Economics Association
A. F. SCHAPLOWSKY, Director
Health Education Services
Kansas State Board of Health
C. GEORGE SEGELER
Engineer of Utilization
American Gas Association
MISS JAYNE SHOVER, Assoc. Director
National Society for Crippled Children and Adults, Inc.

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Georgia Department of Public Health
WARREN TAYLOR, Manager
Safety & Health Department
U. S. Junior Chamber of Commerce
JOHN C. THORNTON, Chairman
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American Institute of Architects
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Community Nursing Service of Oak Park and River Forest (Illinois)
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Health and Safety Adviser
Girl Scouts of the U.S.A.
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St. Louis County (Minn.) Safety Council
MISS JANICE WESTABY
Home Safety Consultant
Oregon State Board of Health
MISS MARY MAY WYMAN, Supervisor
Safety and Special Education
Louisville Public Schools

Women's Activities Conference

"More and more women, as individuals and as members of women's organizations, are taking an interest in Safety. The Women's Conference provides a clearing house for information and an opportunity for joint effort which will be effective in focusing their active interest into intelligent action and tangible results. The moral and practical aspects of Safety are a challenge to all citizens, but particularly to women who have the responsibility of training children in their formative years." —*Marion E. Martin*

Vice President for Women's Activities & Conference Chairman: Martion E. Martin, Commissioner, Department of Labor and Industry, State of Maine

Vice Chairman: Jean Wade Rindlaub, Vice President, Batten, Barton, Durstine, & Osborn

ORGANIZATIONAL MEMBERS

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Woman's Auxiliary to the American Optometric Association, Inc.
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General Federation of Women's Clubs
MRS. J. HOWARD HODGE, Safety Chairman
National Association of Insurance Women
MISS ELIZABETH F. DeCESARI, President
National Federation of Business and Professional Women's Clubs
MISS MARGUERITE D. DE YORE, Chairman, Health and Safety
National Home Demonstration Council
MRS. HOMER GREENE, Safety Chairman
Pilot Club International
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Executive Department
Georgia Power Company
THE HONORABLE B. FAIN TUCKER
Chicago, Illinois

OBSERVERS

National Congress of Parents and Teachers
MRS. P. D. BEVIL, Safety Chairman

Conference Of Local Safety Organizations

This Conference is composed of local and state Chapters of the National Safety Council which have full-time managers.

"The 1954 White House Conference on Highway Safety declared the need for effective citizens' safety organizations in the states and communities. In 1956 the four Regional Conferences of the President's Committee for Traffic Safety were devoted exclusively to this need and to how it can be met most effectively. There is now an unprecedented challenge and opportunity for business and civic leaders to provide the organized effort needed to effect a permanent and substantial reduction in the nation's accident toll."

—Robert R. Snodgrass

Vice President for Local Safety Organizations & Conference Chairman: Robert R. Snodgrass, President, Atlas Auto Finance Company

Vice Chairman: Joseph M. Kaplan, Secretary-Manager, Greater Los Angeles Chapter National Safety Council

Community Chapters

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Earl Smith, Exec. Secy. & Managing Dir.

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Caddo Bossier Safety Council, Inc. (Shrvpt.)
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Chattahoochee Valley Safety Council (West Point, Georgia)
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Earl Edwards, Manager

Chattanooga Safety Council (Tennessee)
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Citizens Safety Council of Hillsborough County (Tampa, Fla.)
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Concord Safety Council (New Hampshire)
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Vernon W. Hale, President
E. Ross Farra, Manager

Greater Los Angeles Chapter (California)
J. T. Blalock, President
Joseph M. Kaplan, Secretary-Manager

Greater Minneapolis Safety Council (Minn.)
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Greater New York Safety Council (N. Y.)
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Sherburne Prescott, Chrm. of Board

Hamilton Safety Council (Ohio)
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W. Russell Hicks, Director

Indianapolis Safety Council (Indiana)
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Jack E. Gunnell, Director

Jacksonville-Duval County Safety Council (Fla.)
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Mrs. Lennie L. Humphries, Exec. Vice Pres.

Kalamazoo Safety Council (Michigan)
Roscoe R. Smith, President
Stanley G. Peck, Director

Kansas City Safety Council (Missouri)
A. A. Fowler, President
George M. Burns, Managing Director

Lehigh Valley Safety Council (Bthlhm., Pa.)
Harry N. Crowder, President
Harold A. Seward, Manager, Secy.-Treas.

Louisville Safety Council, Inc. (Kentucky)
Paul W. Johnson, President
Capt. Estel Hack, Executive Vice Pres.

Maricopa County Chapter (Phoenix, Ariz.)
Vaughan Pierce, President

Metropolitan New Orleans Safety Council, Inc. (Louisiana)
Rene R. Nicaud, President
Dudley Andry, Manager

Metropolitan Safety Council (Denver, Colo.)
Jas W. Liddell, President
Murray Graff, Managing Director

Middletown Safety Council (Ohio)
W. S. Geckler, President

Milwaukee Safety Commission (Wisconsin)
A. S. Frederickson, Chairman
Dr. B. L. Corbett, Managing Director

New Haven Safety Council (Connecticut)
Edwin E. Caspell, President
Albert L. Phillips, Executive Director

Oklahoma City Safety Council (Oklahoma)
George Sturm, President
Dan Hollingsworth, Manager

Omaha Safety Council (Nebraska)
Glenn L. Cavanaugh, President
James R. McCauley, Manager

Philadelphia Safety Council (Pennsylvania)
J. Mark Kirchgasser, Chairman
Harry H. Verdier, Managing Director

Portland Traffic Safety Commission (Ore.)
John L. Carpenter, Chairman
Paul E. Lippold, Director

Racine County Safety Council (Wis.)
Harold F. Jensen, President
Robert M. Sorensen, Secretary-Manager

Richmond Area Safety Council (Virginia)
A. K. Missimer, President
James T. Wadkins, Managing Director

Rochester Safety Council (N. Y.)
Hon. Jacob Gitelman, President
William H. Keeler, Director

Sacramento Safety Council (Calif.)
H. A. Danielson, President
Frank Enos, Exec. Manager

Safety Council, Chamber of Commerce of Fort Wayne (Ind.)
John V. Carton, General Chairman
Ivan A. Martin, Manager

Safety Council, Dayton Chamber of Commerce (Ohio)
Carl H. Marqraf, Chairman
Marvin Purk, Manager

Safety Council Div., Automobile Club of Rhode Island (Providence)
E. S. Harding, Chairman
H. Benton Garvin, Director of Safety

Safety Council of Greater Lansing (Mich.)
Edw. L. Warner, Jr., President
Harold F. Lillie, Director-Secy.

Safety Council of Greater Saint Louis (Mo.)
B. H. Sweeney, President
Wm. F. Yorger, Secretary-Manager

Safety Council of Greater Youngstown (O.)
Wm. F. Zarbaugh, President
Charles A. Zimmerstedt, Manager

Safety Council of Western Massachusetts (Springfield)
George de Learie, President
Victor J. Mari, Executive Director

Safety Division, Syracuse Chamber of Commerce (N. Y.)
Marcy J. Bower, Chairman
Newell C. Townsend, Manager

Saint Joseph Safety Council (Missouri)
Noble I. Ayers, Jr., President
Walter D. Ladd, Manager

San Diego County Traffic Safety Council (Calif.)
Ronald T. Strong, President
David Thompson, Executive Director

San Francisco Chapter (Calif.)
Joseph J. Diviny, President
Iver C. Larson, Executive Vice President

San Joaquin County Safety Council (Stockton, Calif.)
Ken Naill, President
Raymond A. Norwood, Executive Secy.

Santa Clara County Chapter (San Jose, Calif.)
Edwin C. Nelson, President
David N. Kaye, Executive Secretary

Seattle-King County Safety Council (Wash.)
W. J. Billings, President
Wm. A. Feathers, Managing Director

Sioux Falls Safety Council (South Dakota)
Marvin K. Ballin, President
Durand Young, Executive Secretary

Spokane Area Safety Council (Washington)
J. Harold Sampson, President
E. M. Gearhart, Jr., Managing Director

Twin Cities Area Safety Council (St. Joseph, Michigan)
Robert C. Primley, President
Harry Hatcher, Director

Vancouver Traffic and Safety Council (British Columbia, Canada)
R. K. Garvin, President
James Plaskett, Executive Secretary

Western Pennsylvania Safety Council (Pittsburgh, Penn.)
E. J. Hanley, President
Harry H. Brainerd, Executive Manager

Worcester County Safety Council (Mass.)
Andrew B. Holmstrom, President
John W. Greene, Manager

State Chapters

Alberta Safety Council (Canada)
Howard B. MacDonald, M.L.A., President
Howard S. Stutchbury, Managing Director
California Traffic Safety Foundation (San Francisco)
N. R. Sutherland, President
Earl F. Campbell, Managing Director
Connecticut Safety Commission (Hartford)
Robert I. Catlin, Chairman
Delaware Safety Council, Inc. (Wilmington)
Reynolds du Pont, President
J. James Ashton, Manager

Idaho Chapter, National Safety Council (Boise)
L. E. Traeger, President
Louisiana Safety Association (Shreveport)
G. C. Rawls, President
Col. Charles E. Doerler, Secretary
Minnesota Safety Council (St. Paul)
A. V. Rohweder, President
Alfred W. Luecke, Executive Secretary
New Jersey State Safety Council (Newark)
Harold G. Mangelsdorf, President
George G. Traver, Exec. V. Pres. & Secy.

Ohio State Safety Council (Cleveland)
J. W. Dykes, President
H. G. J. Hayes, Exec. Secy. and Treas.
Utah Safety Council (Salt Lake City)
Myron J. Fulrath, President
G. Ernest Bourne, Exec. Secretary
West Virginia Safety Council, Inc. (Charleston)
J. A. Mooney, Chairman
Charles Hopkins, Managing Director

Public Information Conference

"I have always been impressed by the amount of space and time accorded the National Safety Council by newspapers, radio and TV, magazines, trade journals, advertisers and, in fact, every conceivable medium of public information. I realize, of course, that so worthy a cause as safety deserves top notch acceptance by the media. But I also know that only a top notch organization and a first-class public relations program can hope to get such acceptance. The fact that NSC does get it is a great tribute not only to the media of the nation but to the Council and its public relations program." —*Boyd Lewis*

Vice President for Public Information & Conference Chairman: Boyd Lewis, Vice President and Executive Editor, NEA Services, Inc.

Vice Chairman: Judith Waller, Director of Public Affairs and Education, National Broadcasting Company

L. R. BLANCHARD
General Executive Editor
The Gannett Newspapers
GEORGE A. BRANDENBURG
Midwest Editor
Editor & Publisher
ROBERT U. BROWN
Editor
Editor & Publisher
ROBERT R. BURTON
Vice President
Needham, Louis and Brorby
WILLIAM J. CADIGAN
President
International Council of Industrial Editors
HARRY CARL
Editorial Assistant
The American Weekly
Puck—The Comic Weekly
MISS DORIS CORWITH
Supervisor of Public Affairs Program
National Broadcasting Company
J. MONTGOMERY CURTIS
Director
American Press Institute
JOHN CHARLES DALY
Vice President for Public Affairs
American Broadcasting Company
JOHN DENSON
Managing Editor
Newsweek
DON ECK
Executive Secretary
National Editorial Association
BARRY FARIS
Editor-in-Chief
International News Service
CHARLES W. FERGUSON
Senior Editor
The Reader's Digest
HARRY FERGUSON
Executive Editor
United Press

ROBERT FUOSS
Executive Editor
The Saturday Evening Post
FRED GARRIGUS
Manager of Organizational Services
National Association of Radio & Television Broadcasters
MRS. BEATRICE BLACKMAR GOULD
Editor
Ladies' Home Journal
W. EARL HALL
Managing Editor
Mason City (Ia.) Globe-Gazette
WILLIAM RANDOLPH HEARST, JR.
Publisher
New York Journal and American
MISS ELINOR HILLYER
Service Coordinator
Woman's Home Companion
GEORGE JENNINGS
Director
Radio Council
MRS. MYRNA JOHNSTON
Associate Editor
Better Homes & Gardens
MISS LAURA LANE
Associate Editor
Farm Journal
WALTER LAW
Director of Radio and TV Clearance
Mutual Broadcasting System
WILLIAM S. LIMING
President
American Association of Industrial Editors
KENNETH MacDONALD
Executive Editor
Des Moines Register & Tribune
JOHN McDONALD
President
National Association of Radio & TV Directors

GORDON MANNING
Managing Editor
Collier's
SIG MICKELSON
Vice President
News and Public Affairs
Columbia Broadcasting System, Inc.
M. J. MURPHY
Editor
Factory Management & Maintenance
WESLEY I. NUNN
Manager, Advertising Department
Standard Oil Company (Indiana)
MRS. JEAN WADE RINDLAUB
Vice President
Batten, Barton, Durstine & Osborn, Inc.
BURR L. ROBBINS
President
General Outdoor Advertising Company
H. T. ROWE
Director of Information
International Business Machines Corporation
ROBERT SAUDEK
Ford Foundation
CHARLES SCHNEIDER
Promotion Editor
Scripps-Howard Newspapers
MISS HELEN SIOUSSAT
Director, Talks Department
Columbia Broadcasting System, Inc.
MISS HELEN VALENTINE
Editor
Charm
BASIL L. WALTERS
Executive Editor
Knight Newspapers, Inc.
JOHN F. WHEDON
Vice President
Young & Rubicam, Inc.
ALLAN M. WILSON
Vice President
Advertising Council, Inc.

Labor Conference

"Labor is proud to take its place among the National Safety Council Conferences. The Labor Conference is planning a broad program for the development and maintenance of interest and activity in accident prevention on the part of labor groups. It will serve as a medium for the exchange of information and for group planning, both within the Conference and with other Conferences of the National Safety Council. Greatly increased interest and participation can be expected from labor." —*Harry Read*

Vice President for Labor: Harry Read, Asst. to the Secretary-Treasurer, American Federation of Labor—Congress of Industrial Organizations

Chairman: P. L. Siemiller, General Vice President, International Association of Machinists

JOHN T. ATKINSON
Safety Director
International Woodworkers of America
District Council No. 1

AL E. BROWN
Vice President & West Coast Regional Director
International Brotherhood of Paper Makers

FRANK BURKE
Director Safety & Health
United Steelworkers of America

WILLIAM A. CALLAHAN
Chairman
Industrial Accident Commission
State of Oregon

MAURICE CANTON
Union Safety Representative
International Association of Machinists
Aerol Lodge 717

FERNANDO J. CASTRO
Director
Bureau Industrial Safety and Accident Prevention
Department of Labor
San Juan, Puerto Rico

JESSE CLARK
President
Brotherhood of Railroad Signalmen of America

JACOB CLAYMAN
Director of Organization for Canada
Almalgamated Clothing Workers of America

RODGER COYNE
Director Occupational Safety & Health
International Union of Electrical, Radio & Machine Workers

JOHN B. CURAN
Research Director
International Brotherhood of Firemen and Oilers

J. GEORGE EICHHORN
Grand Lodge Representative
International Association of Machinists

CHARLES FERGUSON
Director, Safety Division
United Mine Workers of America

TONEY GALLO
General Secretary-Treasurer
United Cement, Lime and Gypsum Workers International Union

E. H. GILBERT
Chief Inspector
Factory Inspection Branch
Department of Labor
Toronto, Ontario, Canada

J. A. GREENE
Union Safety Representative
International Association of Machinists
Turbo Lodge 717

JOHN GRUDEN
Director Health & Safety Dept.
Ford Local 600
United Automobile Workers

PAUL E. GURSKE
Director
Bureau of Labor Standards
U. S. Department of Labor

HOYT S. HADDOCK
National Maritime Union

O. R. HARTWIG
Consulting Safety Engineer
Portland, Oregon

CARL HOLDERMAN
Commissioner
Department of Labor & Industry
State of New Jersey

BRYCE P. HOLCOMBE
General Organizer
Brotherhood of Painters, Decorators and Paperhangers of America

BARNEY HOPKINS
Secretary-Treasurer
Michigan CIO Council

MORRIS IUSCHEWITZ
Secretary-Treasurer
New York City CIO Council

E. W. KENNEY
Director Research & Education
International Woodworkers of America

JOHN R. KUMPEL
Safety & Compensation Representative
United Rubber, Cork, Linoleum & Plastic Workers of America

R. E. McFARLAND
President
Alaska Territorial Federation of Labor

JAMES A. MORALES
Co-Chairman & Secretary
Safety Committee
Baltimore Federation of Labor

ROBERT J. MYERS
Business Representative
International Association of Machinists
District Lodge No. 118

E. J. PLONDKE
Director of Public Relations
Brotherhood of Maintenance of Way Employees

RAY E. ROBERTS
Safety Director
International Association of Machinists
Lodge 763

JOHN R. ROONEY
Secretary-Treasurer
Ohio C.I.O. Council

ELLSWORTH M. SMITH
Secretary
Cook County Illinois Industrial Union Council

JOHN G. SWANSON
Inspector
International Association of Machinists
Lodge 834

C. R. THORNBROUGH
Commissioner of Labor
State of Arkansas

LLOYD UTTER
Director of Industrial Health and Safety Division
United Automobile Workers

HUNTER P. WHARTON
Assistant to the General President
International Union of Operating Engineers

Farm Conference

"Farm hazards in this mechanized age are tremendous. Even so, splendid strides have been made in farm safety in the past decade. This has been brought about by cooperative effort. Many organizations and individuals close to agriculture have given of their time and substance in this constructive effort. Great tribute is due them—the farm editors, radio farm directors, insurance companies, farm implement manufacturers, educators, agricultural extension workers, farm organizations, and scores of others who jointly make up the Farm Conference of the Council. Both rural and urban America is indeed grateful to them for their organized fight against farm accidents." *—Guy L. Noble*

Vice President for Farms: G. L. Noble, Managing Director, Ntl. Comm. for Boys and Girls Club Work

Chairman: S. P. Lyle, Extension Service, U. S. Department of Agriculture

EDWARD S. ADAMS
Director of Safety
Iowa Farm Bureau Federation

MRS. ALMER ARMSTRONG
Indiana Farm Bur. Coop. Assn.

HAROLD BEATY
Edison Electric Institute

THEO BROWN (Honorary)
Moline, Illinois

GRAHAM T. COULTER
Kraft Foods Company

JOHN F. DANEKE
General Motors Corp.

DONALD DUNHAM
Department Manager
Retirement Safety & Ins. Dept.
Nat'l Rural Electric Coop. Assn.

JOHN M. EKLUND
Assistant Director of Education
Adult Activities
National Farmers Union

T. A. ERICKSON (Honorary)
St. Paul, Minnesota

C. M. FERGUSON
Extension Service
U. S. Dept. of Agriculture

KIRK FOX, Editor
"Successful Farming"
Meredith Publishing Co.

RAYMOND GILKESON
"Kansas Farmer"

HOWARD GRAMLICH
Chicago & Northwestern Rwy. Co.

RUSSELL HESTON
National Association of Mutual Insurance Companies

MISS EUNICE HEYWOOD
Assistant Director
Div. of Home Economics Programs
U. S. Department of Agriculture

C. N. HINKLE
Standard Oil Company (Indiana)

WARD HODGE
President
Michigan Farm Bureau

EDWARD HOLTER
National Grange

MISS AMY KELLY
College of Agriculture
University of Missouri

MRS. DORSEY KIRK
The National Grange

EDWARD R. KLAMM
Allstate Insurance Company

C. C. LANG
Extension Service
U. S. Dept. of Agriculture

E. W. LEHMANN
Professor Emeritus
University of Illinois

E. C. MARTIN
Texas A & M College

EARL MERRILL
Republic Steel Corp.

FLOYD MORRIS
Buffalo, Illinois

PAUL MULLIKEN
Natl. Retail Farm Equip. Assn.

HERSCHEL NEWSOM
The National Grange

V. S. PETERSON
E. I. du Pont de Nemours & Co.

HARRY PONTIOUS
Nationwide Insurance Company

HARRY POWELL
Goodyear Tire & Tubber Co.

FRANK REYNOLDS
Manager, Agricultural Ext.
U. S. Steel Corporation

L. P. RICHIE
Vice President & Dir. of Purchases
The Oliver Corporation

IRA ROGERS, JR.
Automotive Safety Foundation

MARTIN RONNING
Minneapolis-Moline Company

A. J. SCHWANTES
Dept. Agr. Engineering
University of Minnesota

CHARLES SHUMAN
American Farm Bureau Federation

W. T. SPANTON
Federal Security Administration
U. S. Office of Education

ARTHUR STAPEL
Fox Valley Cooperative, Inc.

OTTO STEFFEY, President
Illinois Agricultural Assn.

BOSWELL STEVENS
President
Mississippi Farm Bureau Fed.

W. E. STUCKEY
Farm Safety Specialist
Ohio State University

RANDALL C. SWANSON
Farm Safety Specialist
University of Wisconsin

E. W. TANQUARY
International Harvester Co.

F. R. WILLSEY
Farm Safety Specialist
Purdue University

CHARLES WORCESTER
Radio Station WMT
Cedar Rapids, Iowa

CARLTON ZINK
Products Research Dept.
Deere & Company

Financial Report

HIGHLIGHTS OF 1955 FINANCIAL EXPERIENCE

INCOME	1955	1954
Membership Dues and Sales of Publications and Merchandise	$3,875,378	$3,433,826
Public Service Fund	423,858	358,512
Special Grants	239,455	225,568
Other	93,158	66,853
Total	$4,631,849	$4,084,759

EXPENSE BY DEPARTMENTS	1955	1954
Farm	$ 62,053	$ 47,412
Home	47,500	43,032
Industrial	226,066	199,217
School and College	51,934	43,681
Traffic and Transportation	326,815	304,926
Field Service	219,855	124,935
Labor	3,176	—
Public Information	290,453	283,431
Statistics & Library	148,879	127,200
Women's Activities	16,950	10,953
American Society of Safety Engineers	54,424	42,600
Contributive Fund Solocitation	50,748	54,394
Membership	299,274	275,408
Accounting	75,501	69,429
Records	193,820	167,869
Service	382,220	356,835
Treasury	5,283	—
Employee Benefits	94,271	91,688
General Office Expense	255,323	229,710
Executive & Administrative	155,849	134,063
Personnel	31,059	26,127
Publications & Merchandise	1,513,855	1,358,641
Total	$4,505,307	$3,991,550

ASSETS	Dec. 31, 1955	Dec. 31, 1954
Cash	$ 351,942	$ 423,244
Securities	615,158	653,468
Accounts Receivable	490,649	465,695
Inventories	644,747	602,199
Other Current Assets	99,269	69,359
Fixed Assets	490,328	320,109
Total	$2,692,093	$2,534,074

LIABILITIES	Dec. 31, 1955	Dec. 31, 1954
Accounts Payable	$ 196,118	$ 143,758
Unfulfilled Membership and Service Contracts	916,000	944,000
Appropriations for Special Projects	119,642	112,526
Net Assets and Reserves	1,460,333	1,333,790
Total	$2,692,093	$2,534,074

"A current National Safety Council slogan which expresses a fundamental truth is this: What is *done* to prevent traffic accidents *prevents* traffic accidents. Obviously the slogan applies equally well to all types of accidents. But *doing* things about the accident problem, whether in a business, in a community, in a school, or in the National Safety Council, takes money. And the financial resources which the National Safety Council has are far short of what they should be, to cope with today's accident problems. Those responsible for Council financing will continue their best efforts to make efficient use of all available resources; and we earnestly remind everyone that support of accident prevention is both sound business and good citizenship."
—*William H. Lowe*

Vice President for Finance & Treasurer: William H. Lowe, Treasurer, Inland Steel Company

The tables on the preceding page present income and departmental expense figures as compiled in the course of regular accounting procedures. Supplementing these regular financial reports, the Council's total operations may also be viewed more broadly by classifying all expense charges to one of the five program fields—Industrial, Traffic and Transportation, School, Farm and Home.

In the departmental expense table a staff department is designated for each of these five major program fields. In these five departments are the professional people qualified to prepare the technical reports, work with volunteer groups, and represent the Council in cooperative work with other organizations.

However, the specific departmental staff represents only a fraction of the total expense incurred by the Council to promote any area of safety.

For example, the publicity programs for *all* fields of safety are handled in the Public Information Department. The Membership Department, likewise, is responsible for selling and servicing *all* types of memberships and services. And the work of the Service Department—stenographic, clerical, shipping, etc.—contributes to each of the five program fields.

Operations in each of the program areas also include printing and publishing expenses, for magazines, pamphlets, posters and a great variety of other materials. Also each program area must bear its fair share of overhead expenses as reflected in the departmental charges for Accounting, Records, Employee Benefits, General Office Expense, and so forth.

The situation is similar with respect to income. The four regular income categories, listed on the preceding page, may be re-classified in accordance with the five program fields.

This allocation of income and expense into these program fields can be made on an approximate basis only. The table below, however, is the result of careful study, and portrays a substantially accurate picture of the Council's income and expense for 1955, by program areas.

	Income	*Expense*
Industrial Safety Programs	$2,913,000	$2,429,000
Traffic and Transportation Safety Programs	1,339,000	1,517,000
School Safety Programs.	167,000	249,000
Farm Safety Programs..	120,000	156,000
Home Safety Programs.	88,000	149,000

Each of the five major programs listed above includes some work which is aimed at reducing accidents in one of the other areas. For example, industrial programs include off-the-job safety efforts which are aimed partly at traffic accidents and partly at home accidents. Traffic and transportation programs cover work in the motor transportation industry, which is also a phase of industrial safety. Farm programs deal with work accidents on the farm (industrial), farm home accidents, and traffic accidents of farm people. School programs are aimed at all types of accidents which may include school children and their families.

In line with this analysis it is estimated that, in addition to traffic and transportation programs as such (see table above), approximately $320,000 of the expenditures in the industrial, farm, and home areas were in fact aimed at traffic accident reduction. There was a corresponding income of $260,000. Addition of these figures to the program totals above gives the following estimates of total traffic accident work:

Expense	$1,837,000
Income	$1,599,000
Deficit	$ 238,000

It has been noted that the Council's programs for the motor transportation industry are a major element of the Council's work in the traffic and transportation area. Income exceeds expense for the motor transportation programs and this helps in an important way by reducing the deficit for the entire traffic program.

Membership & Sales Report

Vice President for Membership: Robert T. Ross, Manager, Employee Service, Ford Motor Company

"I am pleased to report once more substantial increases in National Safety Council memberships and sales—a continuation of an upward trend of more than a decade. These increases reflect the increasing interest in accident prevention in American life: people and organizations join the Council and use its safety services and materials because they want to *do* something about accidents. But part of the credit for the Council's growth certainly must go to the members who serve on the conferences, sections and committees, and to the headquarters staff, for the remarkable job they have done in providing low-cost help on important safety problems, tailored to the needs of everyone interested in preventing accidents."

—*Robert T. Ross*

Membership dues, publication sales, advertising and exhibit revenue for the first eight months of 1956 have shown the greatest gain for a comparable period in recent Council history.

Gross income for the period totaled $2,753,700 as compared to $2,408,300 for the same period in 1955, an increase of 14 per cent.

Membership Growth

Membership dues billing for eight months of 1956 increased $58,500, a nine per cent growth in dues billing over a like period in 1955. Approximately one-half of this increase represents net growth, that is, new memberships less cancellations. The balance reflects the expansion of employment or other factors upon which Council membership dues are based.

The chart below shows the distribution of members by type, as of June 30, 1956, and the net change from June 30, 1955. The total membership of 12,850 represents a new all-time high.

Over 4,500 organizations and individuals were contacted by personal letter concerning Council membership. Over 75,000 catalogs, brochures, and sample publications were sent to non-member organizations.

Sales of Materials

The ever-expanding use of Council publications for public education and occupational safety training is well evidenced in the sales figures for this year. Gross sales of materials—exclusive of publications included in membership—for the first eight months of 1956 were $1,705,500 as compared to $1,462,400 for a comparable period of 1955, an increase of 17 per cent. Magazines and other subscription items increased in circulation 10 per cent. Sales of posters and other single-order publications were 23 per cent ahead of the eight-month 1955 total.

Advertising and Exhibits Space

Advertising page volume in the Council's maga-

zines was up 13 per cent for the first eight months of 1956. The average increase for other business publications was 7.5 per cent. Gross advertising revenue for eight months was $227,700, an increase of $27,700 over the same period of 1955.

An increase in exhibit rental rates at the National Safety Congress raised revenue to $84,800 in 1956, as compared to $67,200 in 1955.

Keeping Members Informed

Displays of Council materials were sent to 47 safety conferences and other meetings; Council representatives were in attendance at 24 of these meetings to answer questions about services.

Members were sent 1,400,000 copies of descriptive literature and sample copies of new publications. Approximately 60,000 letters and other communications were sent concerning details of membership.

Changes in Membership and Pricing Structure

The Board of Directors approved in 1956 a general increase in dues and materials prices, and also changes in the regulations regarding the purchase of materials by non-members. These changes, discussed in detail on page 42, should have the effect of greatly increasing the sale and distribution of accident prevention materials.

MEMBERS OF THE NATIONAL SAFETY COUNCIL

TYPE	NUMBER	CHANGE FROM 1955
Industrial Companies	4,665	+110
Transportation Companies	860	+ 97
Construction Companies	247	+ 14
Railroads	128	+ 1
Foreign Companies	101	+ 23
Home Groups	315	+ 98
Schools	2,997	+ 59
Labor Organizations & Labor Departments	130	+ 12
Associations	377	+ 7
Safety Organizations	251	+ 12
Traffic Agencies	983	+ 4
Insurance Companies	192	+ 5
Farm Groups	131	+ 26
Other Organizations & Individuals	422	—17
Hospitals*	969*	n.c.
Libraries*	82*	—6
TOTAL MEMBERSHIP 1956	12,850	449 TOTAL GROWTH

* Hospitals and libraries subscribe to information services which do not provide membership status (voting privileges).

Administrative Report

Revision in Membership Dues and Price Structure

Action taken by the Board of Directors on June 31 authorized increases in membership dues and in prices of Council materials. At the same time, in an effort to broaden the use of safety materials, the Board authorized a narrowing in the difference between member and non-member prices and removed many of the restrictions on the redistribution of Council materials.

Specifically these actions were taken by the Board:

1. Approved revision of By-Laws to permit increases in membership dues 15 per cent in most categories. Changes in the By-Laws require action at two Board meetings. The proposed revisions, therefore will become effective only after second approval at the October 1956 meeting of the Board.
2. Authorized a new single price list for all Council materials, the prices not to exceed an average of more than 15 per cent above present member prices.
3. Authorized, when the new single price list becomes effective, a 10 per cent discount on all purchases by Council members, except that the present policy that persons holding individual membership are not permitted to purchase quantities of employee safety materials at discount.
4. Authorized the immediate lifting of all restrictions on the purchase and redistribution of Council materials.

These dues and publication-price increases are the first such general increases in more than five years, and are expected to bring the Council's pricing structure into line with the increased cost of business operations. The single price listing, offering a discount to members, will greatly simplify billing and records procedures, and will reduce errors and delays.

Narrowing the gap between member and non-member prices and lifting restrictions on the distribution of materials will enable the Council to reach and serve many thousands of smaller business firms, directly and through their trade associations.

Organizational and Staff Changes

Labor Activities. On April 16, 1956, the Labor Conference of the National Safety Council began to function. The scope and policies of the Conference were stated to be:

1. To serve as a medium for voluntary coordination of the activities of labor organizations in all phases of safety.
2. To work with other Conferences of the Council.
3. To guide program development and operation of the Council staff.

A Labor Division to implement the work of the Labor Conference was established. Dan Adair, formerly supervisor of safety, Department of Labor, State of Washington, was named Division Director. The Labor Activities report can be found on page 22.

Control Division. A Control Division was established as a staff activity in February, 1956, with the functions of (1) studying methods, procedures, etc., in administrative areas of the Staff Headquarters and (2) formulating recommendations designed to improve efficiency and economy particularly in rendering service to members.

Closely related to this responsibility, the Control

Division is preparing appropriate operating procedures, flow charts, and manuals essential for the guidance of Staff personnel. It is planned for the Division to also establish programs for records disposal, forms and reports control, and to review cost accounting and inventory methods. C. R. Criddle was named Division Director.

Research Division. On March 4, 1956, a Research Division of the National Safety Council became operative, under the directorship of F. A. Van Atta, Ph.D. This Division will not itself test or approve safety materials, but will have these broad objectives:

1. Collect information about research work in progress in safety and closely related fields.
2. Assemble, collate, analyze, and distribute information on completed research projects.
3. Encourage the prompt publication of work as it is finished.
4. Collect and develop ideas and proposals for new investigations.
5. Find agencies and means for carrying out meritorious investigations.
6. Encourage and assist investigations by the Council staff in fields in which it has unique potentialities.

Publications evaluation. To assure that all Council printed material serves a useful function, agrees with the principles and objectives of the Council, and is not duplicated by other publications, all materials are now reviewed by publication evaluation committees. These committees, made up of staff personnel, review all materials in manuscript, seek full information on the purpose of the publication from the head of the sponsoring division, and report either favorably or unfavorably on the publication to the Executive Vice President. Periodicals such as "National Safety News" and "Public Safety" are subject to constant review by special standing committees representing various program and service divisions with special interest in the periodical.

Staff Increased. Authorized personnel in 1956 was increased to 403, as compared to 385 in 1955. Generally the public safety and program divisions (Field Service, Traffic and Transportation, Home, Farm, and School and College) had the largest proportionate increases in staff. A staff organization chart is shown on page 44.

Improved Coordination of Programs

When various program divisions institute special educational campaigns it is very important that the programs be fully coordinated with and integrated into the activities and interests of all program divisions. This eliminates duplication of effort and, more important, creates greater impact by marshalling all resources for the program.

Coordination of programs was furthered by the establishment in 1955 of the position of Assistant General Manager for Programs, with responsibility for supervision over program activities.

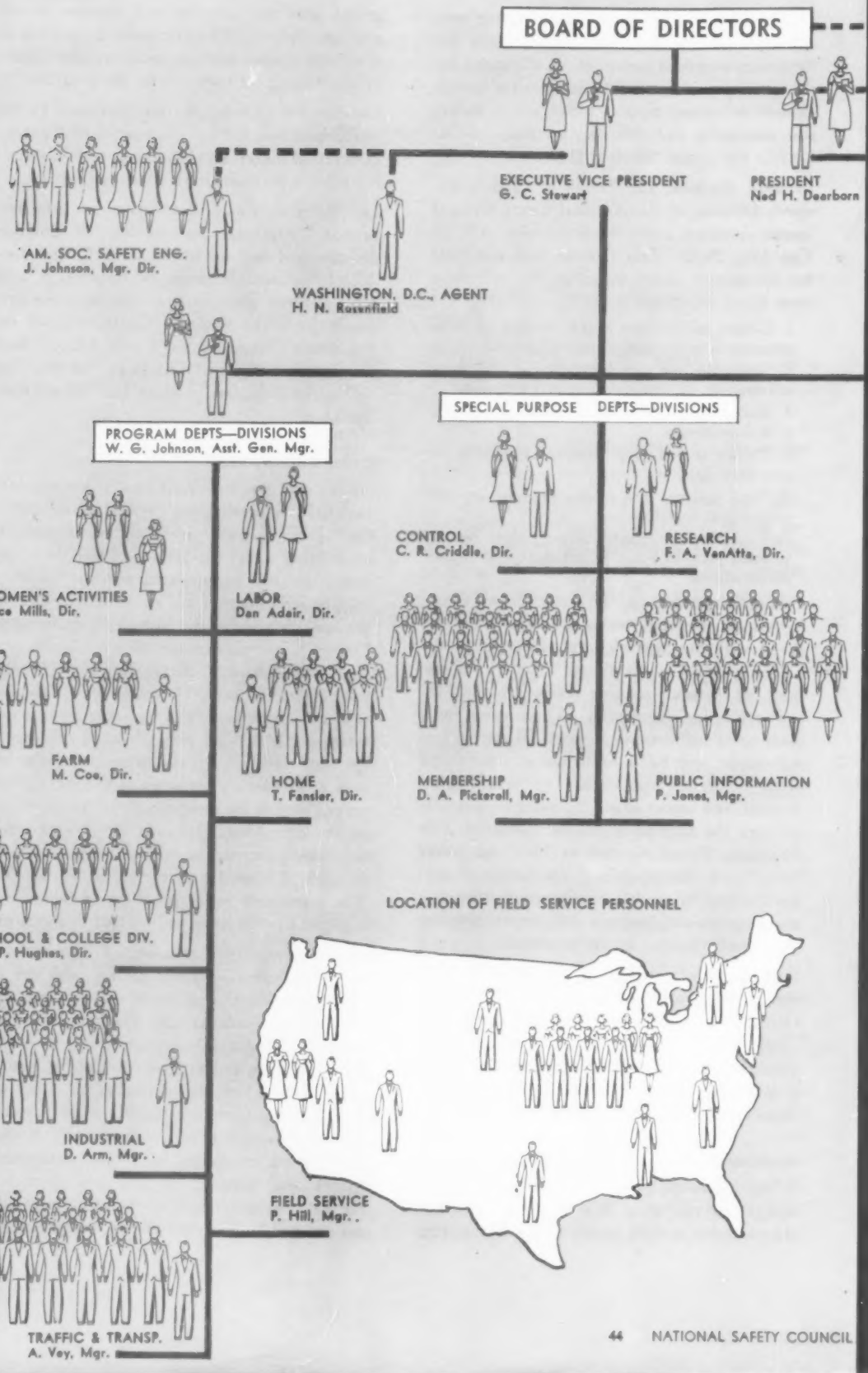
In 1956 a number of coordinated accident prevention campaigns, encompassing all program divisions and facilities of the Council, were conducted, in most instances in cooperation with other national organizations. Among these programs were the Regional Conferences of the President's Committee for Traffic Safety, "Back the Attack," National Campaign for the Prevention of Falls, and support for "Slow Down and Live."

Office Improvements

Offices air conditioned. Council headquarters, comprising approximately 100,000 square feet of floor space, were completely air conditioned, the work being completed in July, 1956. It is estimated that this improvement will pay for itself, first, by reducing time and efficiency losses during the summer months, and, second, by enabling the Council to recruit general office employees more readily. Total cost of the improvement (installation amortized over 14 years, plus additional electrical maintenance and electric power) is estimated at $14,000 per year. Reduced efficiency of the staff during the three summer months had been conservatively estimated at $44,000 (10 per cent of payroll for these months). Actual closing of the offices for 13 hours (1954 experience) accounted for an additional payroll loss of $12,000. The total hot weather loss was $56,000. The investment in air conditioning thus can be expected to yield better than a four-to-one return.

Headquarters safety program. A completely reorganized safety program, in line with the expanded personnel and facilities, was instituted for Council headquarters. The safety program is under the direct leadership of the Executive Vice President, and an Executive Safety Committee, to advise him, was named. Dan Adair was named Safety Director. In addition to inspection for hazards the safety program will embody training of employees in certain departments (stock and shipping, printing and other nonclerical), establishment of a safety suggestion system, and an active off-the-job safety program.

National Safety Council



Staff Organization Chart

TRUSTEES

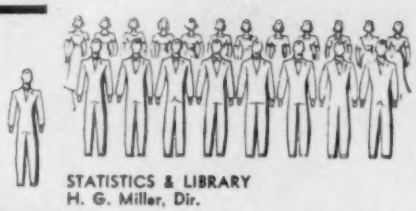
FUND SOLICITATION
W. Gaver, Dir.

AUXILIARY DEPTS—DIVISIONS
R. L. Forney, Asst. Gen. Mgr.

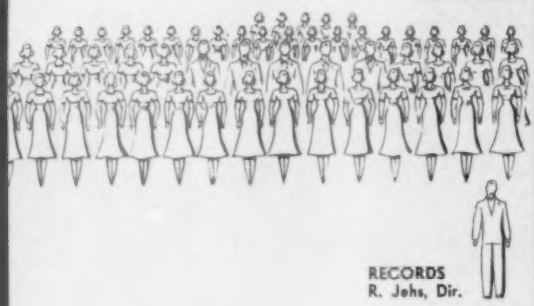
PERSONNEL
A. Thompson, Dir.

TREASURY
J. Fulford, Dir.

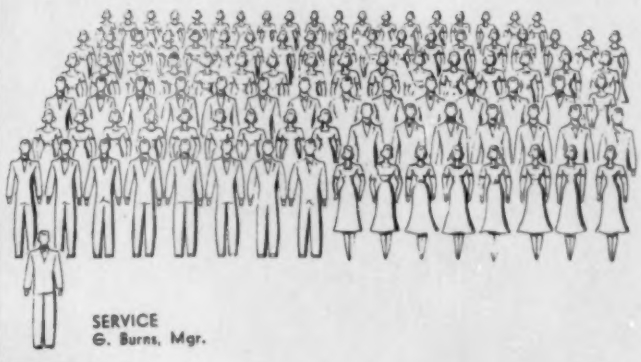
ACCOUNTING
H. Greenwald, Dir.



STATISTICS & LIBRARY
H. G. Miller, Dir.



RECORDS
R. Jehs, Dir.



NATIONAL SAFETY CONGRESS
L. Bland, Dir.

SERVICE
G. Burns, Mgr.

NATIONAL SAFETY COUNCIL

425 NORTH MICHIGAN AVENUE ■ CHICAGO 11, ILLINOIS

■

A Non Profit Organization Dedicated to Accident Prevention

Founded 1913 ■ Chartered by Congress 1953

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